CITY OF ABERDEEN.

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# REPORT

BY THE

## MEDICAL OFFICER OF HEALTH

MATTHEW HAY, M.D., LL.D.

FOR THE YEAR

1912.

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BRITISH MUSEUM

# CITY OF ABERDEEN.

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*For the Year 1912.*

## POPULATION.

*(Table I.)*

As stated in the report for the preceding year, the estimate of the population is now being based on the census population as affected by the increase or decrease of the number of inhabited houses as compared with the number of such houses in the census year. This is the method now adopted by the Registrar-General. The population used in this report and subsequent reports will be the population given by the Registrar-General, but it will include as hitherto an estimate for the number of the staff and inmates of Kingseat Asylum and Oldmill Poorhouse in so far as resident within these institutions. These institutions, although outside the City boundary, belong exclusively to the Parish Council of the City, and are occupied by persons from the City. The births and deaths in these institutions are brought into the figures used in this report.

Thus estimated, the population in 1912, as at the middle of the year, was 164,536. In the preceding year, the population was, on the same basis, 165,426. This is the first year, for a long period of years, in which a reduction of the population has had to be noted. The reduction is due to the continued emigration from the City to British Colonies, especially to Canada, and to the slackening immigration.

The accompanying table gives the percentage and number of the population at each of the principal age-periods.

TABLE I.—ABERDEEN.—POPULATION AT VARIOUS AGE-PERIODS—1901 AND 1912.

(*As estimated from Census.*)

| | | Under 1 year. | 1–5 years. | 5—15 years. | 15—25 years. | 25—45 years. | 45—65 years. | Above 65 years. | ALL AGES. |
|---|---|---|---|---|---|---|---|---|---|
| Percentage of Population at each Age (according to Census) | 1901 | 2·71 | 9·72 | 21·61 | 20·58 | 26·35 | 14·20 | 4·83 | ... |
| | 1911 | 2·23 | 9·03 | 22·13 | 19·13 | 26·84 | 15·31 | 5·33 | ... |
| Estimated Population at each Age-Period in 1912 . . . | | 3,669 | 14,858 | 36,412 | 31,476 | 44,161 | 25,190 | 8,770 | **164,536** |

## BIRTHS.

*(Table II.)*

The total number of births registered during the year, inclusive of 22 births in the City Poorhouse at Oldmill, was 4,187, or at the rate of 25·5 per 1,000 of the population. In the preceding year (1911), the births amounted to 4,057, and were at the rate of 24·5 per 1,000 of the population. In 1910, the births were 4,319, with a rate of 26·2.

The birth-rate for the preceding year was distinctly the lowest on record since civil registration began in 1855. The rate, however, for 1912 shows a slight rise, but, nevertheless, it does not reach the figure recorded for any year preceding 1911, and is under the average for the ten years ending 1911 by 10·5 per cent.

As has been repeatedly stated in previous reports, Aberdeen does not stand alone in the rapid decline of its birth-rate. Practically all the principal towns in this country are showing a decline. Among Scottish towns, both Dundee and Edinburgh, but especially Edinburgh, show a lower birth-rate than Aberdeen, as will be seen in Table XIII. The birth-rate in Edinburgh in 1912 was only 20·8. In Dundee, it was 25·2.

The proportion of males to females born during each of the past five years in Aberdeen has been as follows:—

| Year. | Males to 100 Females. | Year. | Males to 100 Females. |
|---|---|---|---|
| 1907, | 113 | 1910, | 101 |
| 1908, | 104 | 1911, | 102 |
| 1909, | 102 | 1912, | 97 |

The low proportion of males to females observed in the preceding three years was still further emphasised in 1912, and affords an interesting contrast with the high proportion in 1907. It is exceptional to find, as in 1912, that the male births are less numerous than the female births.

*Illegitimate Births.*—The proportion of illegitimate births during the year was 10·7 per cent., or about 1 in every 9 births. Compared with the preceding year, this shows a slight decrease, when the proportion was 10·9 per cent., being the highest recorded since 1886.

The average for the ten years preceding 1912 was 9·1.

*Still-Births.*—Information regarding still-births is being obtained under the Notification of Births Act. The total number of still-births notified in 1912 was 178. In 1911, it was 201, and in 1910 it was 193. A still-born child, as defined in the Notification Act, is a child born after the seventh month of pregnancy. The figures given include a few notified infants—perhaps about a dozen in each year—born between the sixth and seventh months. The proportion of notified still-births, including the births of children between the sixth and seventh months, was, in 1912, 43 per 1,000. A small percentage of still-births escape notification, which in a former report I gave reasons for estimating at 8 to 10 per cent. If allowance is made for this loss, the proportion of still-births in 1912 would have been about 47 per 1,000, or about 1 in 21. In 1911, it was 48 per 1,000.

## TABLE II.—ABERDEEN.—MARRIAGE, BIRTH, AND DEATH-RATES—1856 TO 1912.

Per 1,000 of population.

| Year. | Population. | Marriages. |  | Births. |  | Deaths.* |  |  | Excess of Birth-Rate over Death-Rate. |
|---|---|---|---|---|---|---|---|---|---|
|  |  | Number. | Rate per 1,000 of Population. | Number. | Rate per 1,000 of Population. | Number. | Rate per 1,000 of Population | Average Age at Death. |  |
| **1912** | **164,536** | **1,350** | **8·2** | **4,187** | **25·5** | **2,564** | **15·6** | **40·5** | **9·9** |
| **1911** | 165,426 | 1,335 | 8·1 | 4,057 | 24·5 | 2,512 | 15·2 | 37·7 | 9·3 |
| **1910** | 164,800 | 1,325 | 8·0 | 4,319 | 26·2 | 2,339 | 14·2 | 40·8 | 12·0 |
| **1909** | 164,100 | 1,347 | 8·2 | 4,518 | 27·5 | 2,675 | 16·3 | 36·2 | 11·2 |
| **1908** | 163,600 | 1,297 | 7·9 | 4,472 | 27·3 | 2,582 | 15·8 | 37·4 | 11·5 |
| **1907** | 163,100 | 1,473 | 9·0 | 4,502 | 27·6 | 2,474 | 15·2 | 37·8 | 12·4 |
| **Mean of 1907-1911** | **164,205** | **1,355** | **8·2** | **4,374** | **26·6** | **2,516** | **15·3** | **38 0** | **11·3** |
| **1906** | 162,500 | 1,358 | 8·4 | 4,712 | 29·0 | 2,491 | 15·3 | 35·9 | 13·7 |
| **1905** | 161,500 | 1,374 | 8·5 | 4,892 | 30·3 | 2,618 | 16·2 | 36·5 | 14·1 |
| **1904** | 160,100 | 1,505 | 9·4 | 4,885 | 30·5 | 2,826 | 17·7 | 33·6 | 12·8 |
| **1903** | 158,300 | 1,460 | 9·2 | 4,986 | 31·5 | 2,741 | 17·3 | 34·2 | 14·2 |
| **1902** | 156,300 | 1,429 | 9·1 | 4,814 | 30·8 | 2,816 | 18·0 | 35·7 | 12·8 |
| **Mean of 1902-1906** | **159,740** | **1,425** | **8·9** | **4,858** | **30·4** | **2,698** | **16·9** | **35·2** | **13·5** |
| **1896 1900** | **145,740** | **1,356** | **9·3** | **4,636** | **31·8** | **2,644** | **18·1** | **33·3** | **13·7** |
| **1891-1895** | **131,627** | **1,099** | **8·4** | **4,114** | **31·3** | **2,539** | **19·3** | **32·9** | **12·0** |
| **1886-1890** | **117,587** | **911** | **7·8** | **3,827** | **32·5** | **2,370** | **20·2** | ... | **12·3** |
| **1881-1885** | **108,959** | **848** | **7·8** | **3,712** | **34·1** | **2,159** | **19·8** | ... | **14·3** |
| **1876-1880** | **100,419** | **788** | **7·9** | **3,480** | **34·7** | **2,100** | **20·9** | ... | **13·8** |
| **1871-1875** | **91,941** | **705** | **7·7** | **3,169** | **34·5** | **2,063** | **22·4** | ... | **12·1** |
| **1866-1870** | **84,234** | **684** | **8·1** | **3,010** | **35·7** | **1,978** | **23·5** | ... | **12·2** |
| **1861-1865** | **77,040** | **624** | **8·1** | **2,663** | **34·6** | **1,915** | **24·9** | ... | **9·7** |
| **1856-1860** | **73,458** | **524** | **7·1** | **2,397** | **32·6** | **1,772** | **24·1** | ... | **8·5** |

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* Corrected for transferred deaths for 1904 and subsequent years.

## MARRIAGES.

*(Tables II. and II. (A).)*

During the year 1912, there were 1,350 marriages within the City, equivalent to a rate of 8·2 per 1,000 of population. In the preceding year, there were 1,335 marriages, with a rate of 8·1, and in 1910, there were 1,325 marriages, with a rate of 8·0.

The marriage-rate in 1912 was precisely the same as the average for the preceding five years.

In the more recent reports I have given in tabular form the results of an analysis of the constitution of the marriage-rate. I have prepared a similar table for 1912. I have previously pointed out that the number of registered marriages in a town like Aberdeen is not a correct index of the actual number of persons residing in and belonging to the town. A considerable number of the male residents choose wives from places outside the town, and are usually married and have their marriages registered in these places; while, on the other hand, a not inconsiderable number of marriages take place in the town between persons neither of whom is ordinarily resident in the town. Persons in the surrounding rural districts sometimes find it a convenience to be married in a hall or a hotel in the town; and there are still others who come to the town for facility in carrying through an irregular marriage—that is, a marriage without church rites.

The table classifies all the persons married within the City in 1912, according to the sex, occupation, and age, and also according to residence within or without the City.

*Residence.*—Out of the 1,350 marriages that took place in the City of Aberdeen during 1912, 221 were between parties neither of whom belonged to the City. In the preceding year, out of a total of 1,335 marriages, the number of such marriages of extraneans amounted to 224.

In 901 marriages, both parties were resident in the City. In the preceding year, the corresponding number was 902. The remaining 228 marriages in 1912 were of persons only one of whom was resident in the City.

*Irregular Marriages.*—The number of irregular marriages, including 42 between parties neither of whom belonged to the City, was 100. In the preceding year, it was 105, of which 31 were marriages of non-residents.

*Status.*—In the 1,350 marriages, there were 125 widowers and 54 widows. In the preceding year, there were 115 widowers and 51 widows. There was thus a perceptible increase in the marriages of those who had been previously wedded.

*Occupations of Men.*—Of the total marriages, 1,023 were of men belonging to the labouring and artisan classes, in which have been included, for the purposes of this classification, such persons in the professional classes as members of the Army, Navy, and the Police with a rank corresponding to that of private or non-com-

## TABLE II. (A).—ABERDEEN.—MARRIAGES IN YEAR 1912.

(Number, Age, Status, Occupation, and Residence of Persons Marrying.)

### A.—MEN.

| AGE (years), | Under | 18 | 20 | 22 | 24 | 26 | 28 | All under | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65+ | All Ages. 1912. | All Ages. 1911. | All Ages. 1910. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  | and | under |  |  |  |  |  |  | and | under |  |  |  |  |  |  |  |  |  |
| | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |  |  |  |  |
| *Status:—* | | | | | | | | | | | | | | | | | | | | | |
| BACHELORS, | 1 | 27 | 118 | 196 | 196 | 195 | 152 | 28 | 415 | 442 | 180 | 95 | 30 | 15 | 11 | 4 | 1 | 4 | 1225 | 1220 | 1199 |
| WIDOWERS, | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 5 | 13 | *21 | †31 | 18 | 13 | 9 | 10 | 4 | 125 | 115 | 126 |
| ALL, | 1 | 27 | 119 | 196 | 196 | 195 | 157 | 28 | 416 | 447 | 193 | 116 | 61 | 33 | 24 | 13 | 11 | 8 | 1350 | 1335 | 1325 |
| *Occupation:—* | | | | | | | | | | | | | | | | | | | | | |
| Labouring and Artisan, | 1 | 26 | 108 | 166 | 169 | 144 | 114 | 27 | 361 | 341 | 116 | 80 | 43 | 23 | 14 | 8 | 7 | 3 | 1023 | 929 | 929 |
| Commercial, | 0 | 0 | 11 | 25 | 24 | 38 | 26 | 0 | 48 | 76 | 53 | 26 | 14 | 8 | 8 | 3 | 2 | 3 | 241 | 296 | 285 |
| Professional, | 0 | 1 | 0 | 5 | 3 | 13 | 17 | 1 | 7 | 30 | 24 | 10 | 4 | 2 | 2 | 2 | 0 | 1 | 83 | 106 | 109 |
| Other or No Occupation, | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 4 | 2 |
| *Residence:—* | | | | | | | | | | | | | | | | | | | | | |
| In Aberdeen, | 1 | 24 | 102 | 170 | 149 | 131 | 104 | 25 | 349 | 307 | 111 | 70 | 39 | 20 | 11 | 8 | 7 | 6 | 953 | 952 | 949 |
| Not in Aberdeen, | 0 | 3 | 17 | 26 | 47 | 64 | 53 | 3 | 67 | 140 | 82 | 46 | 22 | 13 | 13 | 5 | 4 | 2 | 397 | 383 | 376 |

### B.—WOMEN.

| AGE (years), | Under | 18 | 20 | 22 | 24 | 26 | 28 | All under | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65+ | All Ages. 1912. | All Ages. 1911. | All Ages. 1910. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  | and | under |  |  |  |  |  |  | and | under |  |  |  |  |  |  |  |  |  |
| | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |  |  |  |  |
| *Status:—* | | | | | | | | | | | | | | | | | | | | | |
| SPINSTERS, | 19 | 119 | 207 | 184 | 217 | 151 | 105 | 138 | 514 | 350 | 164 | 71 | 29 | 18 | 8 | 2 | 1 | 1 | 1296 | 1284 | 1262 |
| WIDOWS, | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 2 | 7 | †13 | 14 | 9 | 5 | 1 | 0 | 2 | 54 | 51 | 63 |
| ALL, | 19 | 119 | 207 | 185 | 217 | 151 | 107 | 138 | 515 | 352 | 171 | 84 | 43 | 27 | 13 | 3 | 1 | 3 | 1350 | 1335 | 1325 |
| *Occupation:—* | | | | | | | | | | | | | | | | | | | | | |
| Domestic Servants, | 1 | 18 | 39 | 47 | 47 | 41 | 18 | 19 | 111 | 81 | 57 | 28 | 16 | 16 | 4 | 0 | 0 | 3 | 335 | 331 | 355 |
| Dressmakers and Milliners, | 0 | 4 | 6 | 13 | 21 | 8 | 12 | 4 | 30 | 30 | 15 | 6 | 4 | 0 | 0 | 1 | 0 | 0 | 90 | 86 | 72 |
| Workers in other Workshops and in Factories, | 11 | 74 | 119 | 79 | 74 | 37 | 21 | 85 | 239 | 91 | 29 | 16 | 10 | 3 | 1 | 0 | 0 | 0 | 474 | 461 | 422 |
| Saleswomen (including Dealers), | 5 | 8 | 10 | 16 | 18 | 9 | 3 | 13 | 36 | 20 | 9 | 4 | 2 | 3 | 1 | 1 | 0 | 0 | 89 | 110 | 95 |
| Clerks and Typists, | 0 | 2 | 5 | 3 | 12 | 7 | 7 | 2 | 15 | 19 | 13 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 51 | 50 | 40 |
| Teachers and Nurses, | 0 | 0 | 4 | 4 | 5 | 18 | 11 | 0 | 10 | 32 | 19 | 12 | 2 | 1 | 1 | 0 | 0 | 0 | 77 | 60 | 55 |
| Other Occupation, | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 10 | 15 | 20 |
| No stated Occupation, | 2 | 12 | 23 | 21 | 40 | 30 | 35 | 14 | 71 | 78 | 29 | 17 | 5 | 3 | 5 | 1 | 1 | 0 | 224 | 222 | 266 |
| *Residence:—* | | | | | | | | | | | | | | | | | | | | | |
| In Aberdeen, | 16 | 108 | 186 | 157 | 172 | 112 | 79 | 124 | 435 | 271 | 123 | 63 | 28 | 22 | 8 | 2 | 1 | 3 | 1080 | 1061 | 1063 |
| Not in Aberdeen, | 3 | 11 | 21 | 28 | 45 | 39 | 28 | 14 | 80 | 81 | 48 | 21 | 15 | 5 | 5 | 1 | 0 | 0 | 270 | 274 | 262 |

* Includes 3 divorced persons.

† Includes a divorced person.

missioned officer in the Army. Such persons in their earnings and habits of family life agree more closely with the labouring and artisan class than with the professional class as ordinarily understood. In the commercial classes, there were 241 marriages; and in the professional classes, 83.

These numbers show, as compared with the preceding year, an increase of marriages among the labouring and artisan classes, but a decrease among the commercial and professional classes.

*Occupations of Women.*—As usual, the class of women in whose ranks the greatest number of marriages took place was that of workers employed in workshops and factories. This class provided 564 marriages, including 90 among dressmakers and milliners. There has been a steady increase in the number of such marriages during the last two years. The next most important group was that of domestic servants, with 335 marriages. The number in this group is practically the same as for the preceding year, but slightly under that for 1910. The third group in respect of size is that of women without stated occupation. In this group there were 224, which is almost exactly the same number as in the preceding year, but 42 under the number for 1910. Next came saleswomen (including dealers), with 89 marriages, or a somewhat smaller number than in the preceding year. The marriages of teachers and nurses have shown a distinct increase, 77 such persons having been married during the year, or 17 more than in the preceding year, and 22 more than in 1910. The marriages of clerks and typists, which numbered 51, were practically the same as in the preceding year, but distinctly higher than in 1910.

*Ages.*—The number of persons marrying under the age of 20 was slightly higher than in the preceding year. Thus, 28 males under this age were married, as compared with 26 in the preceding year. The corresponding numbers for females were 138 and 134. The early marriages of men were, as usual, almost exclusively among persons of the labouring and artisan classes. Those of women were chiefly among factory workers, but also to some extent among domestic servants, saleswomen, and women living at home without a stated occupation.

## DEATHS.

### *(Table II.)*

The total number of deaths during the year was 2,564, equivalent to a death-rate of 15·6 per 1,000 of the population. In the preceding year, the deaths amounted to 2,512, giving a rate of 15·2.

These death-rates have been obtained after adjusting the deaths by interchange between this and other districts of deaths of persons occurring in districts outside their usual place of residence. As the City Poorhouse and the City Asylum are situated outside the town boundary, this adjustment is especially necessary. As previously suggested, it would be advantageous for registration and statistical purposes, and would add much to the convenience of the relatives of the deceased, if the Registrar-General could have seen his way to include these institutions within the registration area of the City.

The death-rate (15·6), although higher than in 1911 (15·2), is lower than the average for the preceding ten years (16·1). The lowest recorded rate (14·2) was in 1910.

The *average age at death* of all persons dying during the year was 40·5 years. In the preceding year, it was 37·7, while in 1910, it was 40·8. With the exception of 1910, the figure for 1912 is the highest on record. Twenty years ago, the average age at death was about 32 to 33 years.

*Relation of Death-Rate to Birth-Rate.*—In Table II. will be found a column giving the excess of the birth-rate over the death-rate since the commencement of registration. It shows that the excess in 1912 was 9·9 per 1,000 of the population. It is satisfactory to find that the excess is somewhat higher than in 1911, when it was 9·3 per 1,000, which was the lowest recorded since the first quinquennium of civil registration, at which period, however, the unavoidable deficiency in the earlier registrations of births may have in considerable measure accounted for the low excess. The usual excess for many years up to 1910 has been 11 or 12 to 14.

## ANALYSIS OF THE DEATH-RATE.

### *(a) Mortality in Relation to Age (Tables III., IV., IV.(A), and V.).*

*Infantile Mortality.*—During the year, there were 530 deaths among children under one year of age, as compared with 563 in the preceding year, 478 in 1910, and 671 in 1909. The infant mortality rate, expressed as deaths per 1,000 births, was 127 during the year, as against 139 in 1911, 111 in 1910, and 149 in 1909. The fall in the infant mortality during the past year, as compared with the preceding year, is mainly due to a lessened mortality from measles and whooping cough, diseases which accounted for the excessive infantile death-rate in 1911. The details of the diseases concerned in infant mortality are given in Tables IV. and IV.(A), and will be referred to more fully under "Mortality in Relation to Cause."

It is to be regretted that, in spite of the steady efforts being made by the Health Visitors of the Corporation, supplemented as they are by the excellent work of the Clubs for Mothers and Babies, the infant mortality in the City is still much higher than it ought to be. I have frequently pointed out that an infant mortality of 60 to 70 per 1,000 births should be attainable if the infants were to receive proper and intelligent care from their mothers, and there is certainly no reason why, apart from the occasional excessive prevalence of epidemics of such diseases as measles and whooping cough, which produce a high death-rate among infants, the infant mortality should rise above 100.

In Table IV.(A) two interesting columns are given, as in the preceding year, showing tho number of infants surviving at the end of one year from birth, and stated per 1,000 of population. This rate, which represents the net gain to the population after the perils of the first year of life have been passed, was, in 1912, 22·2, as against 21·1 for 1911, and an average of 24·7 for the ten years 1902-1911.

## TABLE III.—ABERDEEN.—MORTALITY FROM ALL CAUSES AT VARIOUS AGE-PERIODS*

(per 1,000 of population at each age).

| Year. | INFANTILE MORTALITY. Deaths of Infants under 1 year per 1,000 Births. | AGE PERIOD. 0—5 years. (Pre-School Period.) | 5—15 years. (School Period.) | 15—25 years. (Adolescent Period.) | 25—45 years. (Early Mature Period.) | 45—65 years. (Late Mature Period.) | 65 years and upwards. (Post-mature Period.) | All Ages. |
|---|---|---|---|---|---|---|---|---|
| **1912** . . | **127** | **41·1** | **2·9** | **3·5** | **6·5** | **20·6** | **88·9** | **15·6** |
| **1911** . . | 139 | 45·5 | 3·1 | 3·9 | 5·7 | 18·8 | 79·1 | 15·2 |
| **1910** . . | 111 | 33·1 | 2·9 | 3·3 | 6·4 | 18·7 | 89·2 | 14·2 |
| **1909** . . | 149 | 48·6 | 3·0 | 3·7 | 6·8 | 21·7 | 81·6 | 16·3 |
| **1908** . . | 129 | 43·2 | 3·0 | 3·6 | 7·4 | 21·2 | 82·8 | 15·8 |
| **1907** . . | 125 | 42·3 | 2·8 | 3·3 | 7·1 | 18·3 | 84·5 | 15·2 |
| **Mean of 1907-1911** (Five years). | **131** | **42·5** | **3·0** | **3·6** | **6·7** | **19·7** | **83·4** | **15·3** |
| **1906** . . | 127 | 45·2 | 2·6 | 3·8 | 7·4 | 17·7 | 83·1 | 15·5 |
| **1905** . . | 138 | 47·2 | 3·1 | 4·1 | 6·8 | 21·4 | 82·9 | 16·2 |
| **1904** . . | 151 | 58·0 | 3·2 | 3·8 | 8·0 | 20·3 | 83·0 | 17·5 |
| **1903** . . | 135 | 52·0 | 2·8 | 4·6 | 7·0 | 20·4 | 78·8 | 16·6 |
| **1902** . . | 137 | 50·3 | 2·9 | 5·2 | 7·7 | 22·3 | 87·8 | 17·5 |
| **Mean of 1902-1906** (Five years). | **138** | **50·5** | **2·9** | **4·3** | **7·4** | **20·4** | **83·1** | **16·7** |
| 1901-1905 . | 143 | 52·2 | 3·1 | 4·6 | 7·4 | 21·3 | 83·3 | 17·1 |
| 1896-1900 . | 144 | 54·2 | 3·4 | 5·0 | 9·2 | 22·2 | 81·6 | 18·1 |
| 1891-1895 . | 147 | 57·5 | 4·5 | 5·8 | 9·3 | 22·7 | 86·5 | 19·3 |
| 1886-1890 . | 140 | 52·9 | 4·8 | 7·0 | 10·5 | 22·9 | 88·1 | 20·2 |
| 1881-1885 . | 126 | 50·9 | 5·4 | 6·4 | 10·1 | 23·8 | 86·3 | 19·8 |
| 1876-1880 . | 129 | 53·1 | 6·2 | 7·7 | 11·3 | 22·1 | 86·6 | 20·9 |
| 1871-1875 . | 133 | 57·5 | 7·7 | 8·2 | 12·0 | 22·6 | 91·5 | 22·4 |
| 1866-1870 . | 133 | 68·0 | 7·2 | 8·9 | 12·4 | 22·2 | 91·2 | 23·5 |
| 1861-1865 . | 130 | 68·9 | 8·1 | 10·5 | 13·4 | 24·7 | 98·7 | 24·9 |
| 1856-1860 . | 126 | 67·8 | 9·3 | 9·8 | 12·6 | 21·8 | 97·5 | 24·1 |

* Corrected for transferred deaths in 1904 and subsequent years.

This rate, which is the measure of two variable quantities, namely, the birth-rate and the infant death-rate, is a more exact indication than the birth-rate of the real internal addition to the population. If the infantile death-rate could be reduced to what is usually regarded as reasonably attainable proportions, the effect on the population of the fall in the birth-rate in recent years would be largely modified, if not altogether eliminated.

*Visitation of Infants by Health Visitors.*—The Notification of Births Act continues to be very useful in enabling the Health Visitors to reach quickly the mothers and babies requiring their attention. The Act is being worked with great smoothness and, in all the circumstances, with remarkable completeness. The notifications are checked by returns obtained from the registrars; and, in each case in which no notification has been received, a notice is at once sent to the parents directing their attention to their neglect to notify, and to their consequent liability to penalty.

The subjoined table gives the notified births during the year. It shows that out of 4,165 births registered within the City, exclusive of the births at Oldmill Poorhouse, 3,071, or about 74 per cent., were notified within 48 hours; 634, or 15 per cent., were notified between two and four days; and 188, or nearly 5 per cent., were notified between four and seven days. The remaining 243 intimations, or about 6 per cent., were, for the most part, received after the parents had been reminded of their duty. In 29 births, no intimation of any kind was received. In the preceding year, the corresponding percentages were 75, 15, 4, and 5, respectively, and the number of births regarding which no intimation was at any time received was 35.

### BIRTHS NOTIFIED IN 1912 UNDER THE NOTIFICATION OF BIRTHS ACT.

*(Total Live-Births registered by Registrars—4,165.)*

(*Ex*cluding 22 in City Poorhouse, outside City Boundary, and not Notified.)

| NOTIFIED BY | LIVE-BORN. | | | | | STILL-BORN. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Within 48 Hours. | 4 Days. | 7 Days. | Later. | All. | 48 Hours. | 4 Days. | 7 Days. | Later. | All. |
| Parent | 562 | 141 | 43 | 164 | 910 | 19 | 2 | — | — | 21 |
| Medical Attendant | 1,563 | 283 | 75 | 57 | 1,978 | 79 | 12 | 2 | — | 93 |
| Midwife or Nurse | 723 | 185 | 68 | 16 | 992 | 44 | 15 | 2 | — | 61 |
| Parent and Med. Attendant or Midwife | 213 | 24 | 2 | 6 | 245 | 3 | — | — | — | 3 |
| Med. Attendant and Midwife | 10 | 1 | — | — | 11 | — | — | — | — | — |
| TOTALS | 3,071 | 634 | 188 | 243 | 4,136 | 145 | 29 | 4 | — | 178 |

## TABLE IV.—ABERDEEN.—CAUSES OF DEATH AMONG CHILDREN UNDER FIVE YEARS OF AGE.—*Year* 1912.

(*Corrected for transferred deaths.*)

| CAUSES OF DEATH. | AGE. | | | | | | | | | | | | | | | | | Average for Preceding 5 Years. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WEEKS. | | | | MONTHS. | | | | | | | YEARS. | | | | | Total | | |
| | 0–1 | –2 | –3 | –4 | *0–1 | –2 | –3 | *0–3 | –6 | –9 | –12 | *0–1 | –2 | –3 | –4 | –5 | *0–5 | 0–1 | 0–5 |
| Prematurity | 82 | 8 | 6 | 6 | 102 | 4 | 6 | 112 | ... | ... | ... | 112 | ... | ... | ... | ... | 112 | 106 | 106 |
| Congenital Defects and Atelectasis | 14 | 2 | ... | 2 | 18 | ... | 1 | 19 | 1 | ... | ... | 20 | ... | ... | ... | ... | 20 | 26 | 26 |
| Injury at Birth | 6 | 1 | ... | ... | 7 | ... | ... | 7 | ... | ... | ... | 7 | ... | ... | ... | ... | 7 | 5 | 5 |
| Wasting and Debility | 7 | 1 | 3 | 4 | 15 | 9 | 13 | 37 | 17 | 2 | 1 | 57 | ... | ... | ... | ... | 57 | 66 | 67 |
| Convulsions | 3 | 3 | 5 | 2 | 13 | 2 | 5 | 20 | 11 | 4 | 3 | 38 | 5 | 3 | 1 | ... | 47 | 38 | 48 |
| Inflammation of Brain and Membranes | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | ... | 3 | 3 | 1 | 2 | ... | 9 | 10 | 18 |
| Pneumonia | ... | ... | ... | 1 | 1 | 8 | 11 | 20 | 13 | 7 | 19 | 59 | 37 | 5 | 1 | 3 | 105 | 57 | 100 |
| Bronchitis | ... | 3 | 2 | 1 | 6 | 12 | 6 | 24 | 12 | 3 | 4 | 43 | 5 | 1 | 1 | ... | 50 | 45 | 56 |
| Diseases of Circulation | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 2 | 3·4 | 4·8 |
| Urinary Diseases | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | ... | ... | 3 | 1·2 | 2·4 |
| Diseases of Digestive System, incl. Diarrhœa | 1 | ... | 2 | 6 | 9 | 4 | 11 | 24 | 19 | 12 | 10 | 65 | 12 | 1 | ... | 3 | 81 | 76 | 95 |
| Tuberculosis of (a) Brain | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 3 | 1 | 5 | 5 | 4 | 5 | 1 | 20 | 7 | 27 |
| Tuberculosis of (b) Abdomen | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 2 | 3 | 3 | 2 | .. | 1 | 9 | 7 | 17 |
| Tuberculosis of (c) Lungs | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 2 | 2 | ... | ... | 5 | 1·6 | 7 |
| Tuberculosis of (d) Other forms | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | 1 | 1 | ... | ... | 2 | 2·2 | 8 |
| Measles | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | 8 | 12 | 18 | 3 | 1 | 3 | 37 | 19 | 49 |
| Whooping Cough | ... | ... | ... | 1 | 1 | 4 | 3 | 8 | 11 | 7 | 4 | 30 | 19 | 6 | ... | 3 | 58 | 38 | 69 |
| Scarlet Fever | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 2 | 6 | 2 | 6 | 17 | 0·8 | 7 |
| Diphtheria | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | 1 | 4 | 7 | 9 | 1 | 3 | 24 | 4·4 | 19 |
| Typhoid Fever | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| Epidemic Cerebro-Spinal Meningitis | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | 1 | ... | ... | 1 | 0·4 | 0·6 |
| Burns and Scalds | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 3 | ... | 1 | 1 | 6 | 0·8 | 11 |
| Suffocation | 2 | ... | ... | ... | 2 | 1 | 1 | 4 | 1 | 3 | ... | 8 | 1 | ... | .. | ... | 9 | 6 | 7 |
| Other Accidents | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | 4 | 0·6 | 4 |
| Other Causes | 5 | 4 | 3 | 4 | 16 | 8 | 9 | 33 | 15 | 6 | 6 | 60 | 12 | 2 | 1 | 1 | 76 | 48 | 66 |
| ALL CAUSES | 120 | 22 | 21 | 27 | 190 | 52 | 67 | 309 | 108 | 50 | 63 | 530 | 138 | 50 | 17 | 27 | 762 | 569 | 820 |
| Average for preceding 5 years | 107 | 30 | 30 | 23 | 190 | 57 | 56 | 301 | 110 | 87 | 68 | 569 | 140 | 54 | 34 | 23 | 820 | | |

* This column includes all deaths in preceding columns.

## Table IV. (a).—Aberdeen.—Infant Mortality.—*Years* 1902-1912.

(*Corrected for transferred deaths since 1904.*)

| YEAR. | No. of Births. | Births per 1,000 of Population. | Deaths of Infants under 1 year. | Deaths of Infants under 1 year per 1,000 Births. | No. of Survivors. | Survivors per 1,000 of Population. | No. of Deaths among Children Dying under 1 Year of Age from Chief Causes. | | | | | | | | | No. of Deaths from All Causes at Ages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Prematurity and Congenital Defects. | Dis. of Digest. System, Wasting and Debility, Convulsions. | Bronchitis and Pneumonia. | Tuberculosis. | Measles. | Whooping Cough. | Diphtheria. | Scarlet Fever. | Suffocation. | Under 1 Week. | Above 1 and under 4 Weeks. |
| **1912** . . . . | **4187** | **25·5** | **530** | **127** | **3657** | **22·2** | **121** | **160** | **102** | **9** | **12** | **30** | **4** | **1** | **8** | **120** | **70** |
| **1911** . . . . | 4057 | 24·5 | 563 | 139 | 3494 | 21·1 | 100 | 177 | 93 | 21 | 44 | 45 | 4 | 1 | 6 | 108 | 74 |
| **1910** . . . . | 4319 | 26·2 | 478 | 111 | 3841 | 23·3 | 136 | 181 | 75 | 12 | 3 | 8 | 7 | 0 | 5 | 112 | 63 |
| **1909** . . . . | 4518 | 27·5 | 671 | 149 | 3847 | 23·4 | 172 | 194 | 133 | 22 | 7 | 56 | 5 | 0 | 7 | 130 | 114 |
| **1908** . . . . | 4472 | 27·3 | 577 | 129 | 3895 | 23·8 | 119 | 191 | 98 | 20 | 30 | 34 | 2 | 1 | 7 | 85 | 79 |
| **1907** . . . . | 4502 | 27·6 | 561 | 125 | 3941 | 24·2 | 143 | 175 | 108 | 18 | 12 | 45 | 4 | 2 | 7 | 101 | 86 |
| Average **1907-1911** . | **4374** | **26·6** | **570** | **131** | **3804** | **23·2** | **134** | **184** | **101** | **19** | **19** | **38** | **4** | **0·8** | **6** | **107** | **83** |
| **1906** . . . . | 4712 | 29·0 | 599 | 127 | 4113 | 25·3 | 148 | 201 | 84 | 21 | 29 | 29 | 3 | 1 | 8 | 123 | 76 |
| **1905** . . . . | 4892 | 30·3 | 678 | 138 | 4214 | 26·1 | 153 | 255 | 132 | 19 | 12 | 16 | 3 | 0 | 8 | 108 | 85 |
| **1904** . . . . | 4885 | 30·5 | 733 | 151 | 4152 | 25·9 | 146 | 254 | 131 | 32 | 28 | 66 | 3 | 0 | 5 | 125 | 97 |
| **1903** . . . . | 4986 | 31·5 | 675 | 135 | 4311 | 27·2 | 135 | 239 | 116 | 24 | 51 | 18 | 1 | 1 | 7 | 118 | 80 |
| **1902** . . . . | 4814 | 30·8 | 657 | 137 | 4157 | 26·6 | 133 | 209 | 124 | 23 | 10 | 59 | 6 | 0 | 11 | 118 | 92 |
| Average **1902-1906** . | **4858** | **30·4** | **668** | **138** | **4189** | **26·2** | **143** | **232** | **117** | **24** | **26** | **38** | **3** | **0·4** | **8** | **118** | **86** |
| Average ten years—**1902-1911** . . | **4616** | **28·5** | **619** | **134** | **3997** | **24·7** | **139** | **208** | **109** | **21** | **23** | **38** | **4** | **0·6** | **7** | **113** | **85** |

The number of notifications (243) received after seven days, together with 29 cases in which no notification was ever received, shows a slightly increasing slackness in notification as compared with the corresponding numbers for the preceding year, which were 220 and 35, respectively. In 1910, however, the numbers were 292 and 43. No prosecution has as yet been undertaken for neglect to notify. In many cases the neglect is due to the parent's ignorance of the law, and to the medical attendant or midwife having omitted to inform the parents of the obligation to notify.

The table further shows that notification was received from the parents in between one-fourth and one-fifth of all the births, from the medical attendant in slightly under one-half, and from the midwife or nurse in slightly under one-fourth. Since the Act came into force, there has been a steady decrease in the proportion of notifications by the parents and an increase in the proportion by the medical attendant, and especially by the midwife or nurse. These changes point to the doctors and nurses being increasingly willing to co-operate in working the Act.

The following table gives the number of infants visited and, in selected cases, supervised by the three Health Visitors of the Corporation appointed for the purpose of dealing with infants and with domestic cleanliness. The table shows that the Health Visitors called during the year at the homes of 2,398 infants, or nearly three-fourths of all the children born in the City. These visits were, as usual, mostly confined to the smaller houses, that is, houses of one to three rooms. The proportion of breast-feeding (whole or part) amounted to 90 per cent. in one-roomed houses; 83 per cent. in two-roomed houses; 64 per cent. in three-roomed houses; and 50 per cent. in four-roomed houses. The percentage of breast-feeding in the total cases visited by the Health Visitors during the year was 78. This is substantially under the figure for the preceding year, which was 84 per cent. A small

### ABERDEEN.—INFANTS VISITED BY HEALTH VISITORS.

(*Infants alive at Visitation.*)

| SIZE OF HOUSE. | St. Nicholas. | St. Machar (incl. E. Peter-culter). | Nigg (Torry). | Wood-side. | Old Aberdeen | Total. | Breast-fed. | Hand-fed. | Percentage of Breast-fed in total Infants Visited. |
|---|---|---|---|---|---|---|---|---|---|
| 1 Room . . | 280 | 86 | 23 | 4 | — | 393 | 351 | 42 | 90 |
| 2 Rooms . . | 667 | 416 | 164 | 87 | 24 | 1,358 | 1,125 | 233 | 83 |
| 3 Rooms . . | 236 | 163 | 71 | 45 | 9 | 524 | 336 | 188 | 64 |
| 4 Rooms . . | 56 | 49 | 9 | 4 | 5 | 123 | 62 | 61 | 50 |
| ALL HOUSES, 1912 | 1,239 | 714 | 267 | 140 | 38 | 2,398 | 1,874 | 524 | 78 |
| All Houses, 1911 | 1,272 | 1,055 | 335 | 140 | 37 | 2,839 | 2,398 | 441 | 84 |

part of the fall may be attributable to the advice now being given by the Tuberculosis Medical Officer to several of the mothers suffering from pulmonary tuberculosis to give up the nursing of their babies in order to lessen the chances of infection.

The table includes only such infants as were found alive at the first visit. Altogether, 83 infants had died before visitation. Of these, 14 were in one-roomed houses; 46 in two-roomed houses; 16 in three-roomed houses; and 7 in houses of four rooms.

The Health Visitors, in addition to visiting the homes of infants and giving instructions to mothers in regard to the care and especially the feeding of the infants, devoted an appreciable part of their time to assisting in the work of the Mothers' and Babies' Clubs. They also take part in the lectures at these Clubs. The lectures are now mainly given, however, by the honorary medical officers, and, in respect of cookery, by Mrs. Livingston.

As is shown in the accompanying table, it was found by the Visitors that of the 2,447 infants visited, 1,279, or 52 per cent. of the births, had been attended by a private medical practitioner, and that 833, or 34 per cent., had been attended by a midwife or nurse. In 212, or nearly 9 per cent., attendance was received in connection with the outdoor department of the Maternity Hospital; while in the remaining 123 cases, or 5 per cent., the mother gave birth to her child within the Maternity Hospital itself. In 20 of the cases attended by midwives, the assistance of a medical practitioner was obtained by the midwife on account of difficulty in the confinement.

Aberdeen.—Nature of Professional Attendance at Birth—1912.

| Year. | Total Births. | Number Visited by Health Visitors. | Private Medical Practitioner. | | Midwife or Nurse. | | Maternity Hospital. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Outdoor. | | Indoor. | |
| | | | No. | Per cent. | No. | Per cent. | No. | Per cent. | No. | Per cent. |
| 1911 | 4057 | 2839 | 1601 | 56·7 | 911 | 32·0 | 180 | 6·6 | 139 | 4·7 |
| 1912 | 4187 | 2447 | 1279 | 52·2 | 833 | 34·1 | 212 | 8·7 | 123 | 5·0 |

It will be seen from the table that the proportion of cases attended by a private medical attendant was somewhat less than in the preceding year, and that the proportion attended by a midwife was somewhat greater. There was also an increase in the proportion of cases attended in connection with both the outdoor and the indoor departments of the Maternity Hospital.

In the outlying districts of the City, such as Woodside and Torry, the proportion of confinements attended by a medical practitioner was much higher than in the middle of the City.

The Association for Improving the Condition of the Poor and similar organisations continue to give ready assistance, on the request of the Visitors, to many of the poorer and badly fed mothers. The Managers of the Soup Kitchen also continue to supply to the Health Visitors many hundreds of tickets for soup and other food. This help has been of great value. The Mothers' and Babies' Clubs, especially the Central Club, have from their own funds expended a considerable sum in providing milk for both mothers and infants.

In connection with the work of the Health Visitors, most valuable help was received from the Mothers' and Babies' Clubs and from the Guild of Voluntary Visitors. There were 53 such Voluntary Visitors during the year. Not only are the Clubs and the Guild undertaking a large amount of active and personal work, but their presence in the movement for the improvement of the conditions of infant life is a great stimulus and encouragement to the Public Health Department.

The work of these Clubs has been fully described in previous reports. It is gratifying to be able to state that the work of each Club continues to grow year by year, as measured by the number of babies and their mothers enrolled on the lists. The work, which began with the Central Club in the Gallowgate, was extended, as stated in the report for 1911, by the institution of a second Club at Woodside. During 1912, two additional Clubs were opened—one at Footdee, under the presidency of Mrs. A. D. Donaldson, and the other in Old Aberdeen, under the presidency of Mrs. George Adam Smith.

The funds of the Clubs are mainly obtained from voluntary sources, but a grant is now being received each year from the Town Council. This grant was begun in 1911, when 15 guineas was voted. It was subsequently increased to £25. A large part of the Town Council's grant is being expended on milk. The Health Department continues to supply, through the Health Visitors and the Clubs, special cans for sterilising the milk used for feeding infants. The cans are lent to mothers who are unable to pay for them, and sold to other mothers at cost price. Tubeless feeding bottles are also supplied by the Health Department to the poorer mothers, and sold at cost price to those who can afford to pay for them. The Town Council has made a special grant for the gratuitous supply of cheap but efficient sterilising cans.

I desire to express once more the great indebtedness of the Health Department for the invaluable assistance received in the direction of the work relating to infant management from the ladies who manage the Clubs, and particularly from Mrs. G. B. Esslemont, President of the Central Committee, and from Miss Jean Croll, the Secretary. The Department is also deeply indebted to Dr. Smart for his services at the Central Club and for the course of lectures given by him to the Guild of Voluntary Visitors. Cordial thanks are also due to Dr. Forbes for his lectures and medical services in connection with the Footdee Club.

It is very desirable that more ample means should be devised for instructing, in continuation classes, girls in infant hygiene, and, indeed, in housewifery in general. Technical training in housewifery is as pressingly needed for girls as is technical training in industries for boys, the more that owing to the larger employment nowadays of girls and young women in work other than domestic work, many girls begin married life with the crudest notions of their duties.

*Mortality at Pre-School Age-Period* (1 *to* 5 *years), excluding Infant Period.*—The number of deaths at these ages during 1912 was 232, which is equivalent to a death-rate of 15·6 per 1,000 of the population at this age, as against 19·1 in the preceding year, and an average of 17·8 in the preceding ten years (Table V.). The somewhat higher rate in the preceding year had been mainly due to measles and whooping cough. The mortality at this age-period, like that at the infant period, is one which is still considerably higher than it should be, and is mainly due to an excessive mortality among children in the first year of the age-period, whose behaviour towards certain diseases is much the same as for infants under one year of age. As in the case of the infant mortality, Aberdeen is by no means exceptional in its death-rate at the pre-school period. At this age-period, as among infants, the excessive deaths are mainly due to the ignorance of many mothers in the proper care and feeding of young children.

*Mortality at School Age-Period* (5 *to* 15 *years).*—The mortality at this age-period (2·9 per 1,000 of the population at the particular age) is slightly lower than in the preceding year, when it was 3·1, and is the same as in 1910. It is also slightly under the average (3·0) for the five years ending 1911. It is, however, less than one-third of the rate in the first five years of civil registration. There has been practically no trend of change in the rate during the past ten or twelve years.

The work of the medical staff of the School Board is being carried on with much energy and discretion, and must, when adequately backed up by medical treatment in cases where such treatment is found to be necessary and recommended, assist materially in influencing the health of children of the school age.

The joint arrangement between the Town Council and the School Board for the cleansing of verminous children and households has continued to work satisfactorily during the year, and is unquestionably of service in raising the standard of cleanliness in the more neglected households of the community. During the year, the inmates, together with the clothing and bedding, of 120 households were removed to the Cleansing Station of the Public Health Department for cleansing and disinfection. The house itself was thoroughly cleansed and disinfected, while the clothing and bedding were sterilised in the steam disinfector, and each inmate was given a bath. The services of one inspector are exclusively employed in the visitation of families in the school children of which the school medical staff have found indications of uncleanliness. In addition to the inspector, a married couple are employed at the Cleansing Station for the work carried on there.

Aberdeen is still far from being adequately provided with play and recreation grounds for children, apart from such grounds as are attached to the principal schools. The playground recently provided in the cleared area in the Gallowgate is being largely taken advantage of by the children living in this central and crowded part of the City, and serves to show how similar playgrounds, if established elsewhere, would be fully utilised. The difficulty and expense of providing such playgrounds in the older parts of the City are obvious, although not insuperable. There ought, however, to be no difficulty in making provision for children's playgrounds in the planning of those parts of the town that are laid out for new buildings. Unfortunately, practically no provision has so far been made in this direction.

I have again to express the thanks of the Public Health Department to those ladies and gentlemen in the City who provide a holiday in the country for a large proportion of the poorer and more ailing children of the City. There are few philanthropic schemes connected with the City that render more help to the public health than the Children's Fresh Air Fortnight, with its Home at Linnmoor, and the Aberdeen Camp for Ailing Children at Scotston Moor. Such agencies come in at the right time in preventing children becoming really ill. It is always more easy to prevent ill-health than to cure it. During 1912, 841 children were sent to the Homes at Linnmoor and Scotston. The children are usually kept for a fortnight in the Homes, each of which is placed on a rough moor in the best of good air, and the more sickly children are kept for longer periods. They are comfortably housed and well fed, and the Committees of Management take great personal interest in providing for the well-being and entertainment of the children during the holiday. Nothing is more pleasing than a visit to these Homes. Visitors are always welcomed, and rarely leave without making a contribution to the funds of the Homes. The Home at Linnmoor has added to its valuable summer services by making provision during the winter for children of the pre-tuberculous type. This is proving of great assistance to the Public Health Department in dealing with tuberculous families, and is an invaluable addition to the work being undertaken by the Department in connection with the prevention of tuberculosis. The work of the Homes is being carried on with remarkably little cost, the maintenance of each child costing only about three or four shillings weekly. Much of the services required in connection with conducting the Homes is given gratuitously. These Homes are mainly doing the work that is being provided for largely by State help in Germany, in the form of so-called Forest Homes, which are usually open only during the summer. It would be an advantage, if the funds were adequate, to keep these Homes open for a somewhat longer time during the summer, and especially to extend the work that is being done at Linnmoor during the winter. The School Board have been utilising with much advantage the Linnmoor Home for ailing school children, and are paying the whole cost of their maintenance. The Homes have, I think, a distinct claim not only upon private charity but upon some support from the rates.

Many poor children received much benefit from the feeding provided for them during the winter months by the School Board from the funds previously in charge of the Educational Trust. The meals were supplied at two centres—Queen Street and Woodside. At Queen Street, the children received two meals daily (breakfast and dinner) over the whole school session of ten months, the average attendance being 290 at breakfast and 306 at dinner. At Woodside, during the same period, dinners were supplied to an average of 47 children daily.

# TABLE V.—ABERDEEN.—MORTALITY AT VARIOUS AGE-PERIODS FROM VARIOUS CAUSES.

*(Corrected for transferred deaths.)*

| AGE. | ALL CAUSES. | Zymotic Diseases. | | | Tuberculous Diseases. | | Respiratory Diseases. | | | Diseases of Circulatory System | Diseases of Genito-Urinary System. | Nervous Diseases. | | | Dis. of Digest. Syst. incl. Diarrhoea. | Malignant Diseases. | Developmental Diseases (ex. old age) | Accident and Violence. | Debility, Atrophy, Inanition. | | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Ordinary. | Venereal. | Septic. | Phthisis. | Other Tuberculous | Pneumonia. | Bronchitis. | Other Respiratory. | | | Cerebral Haemorrhage & Hemiplegia. | Convulsions | Other Nervous. | | | | | Under age of 1 year. | Above age of 55 years. | |
| **A.—NUMBER OF DEATHS—YEAR 1912.** | | | | | | | | | | | | | | | | | | | | | |
| Under 1 year, | 530 | 51 | 18 | 0 | 1 | 8 | 59 | 43 | 6 | 0 | 1 | 0 | 38 | 11 | 65 | 0 | 132 | 9 | 70 | 0 | 18 |
| 1—5 years, | 232 | 93 | 2 | 0 | 4 | 23 | 45 | 8 | 3 | 2 | 2 | 0 | 9 | 7 | 16 | 1 | 0 | 10 | 0 | 0 | 7 |
| 5—15 ,, | 105 | 29 | 0 | 2 | 12 | 21 | 4 | 0 | 0 | 6 | 0 | 0 | 1 | 6 | 8 | 1 | 0 | 6 | 0 | 0 | 9 |
| 15—25 ,, | 109 | 7 | 2 | 0 | 34 | 5 | 7 | 1 | 2 | 12 | 5 | 2 | 0 | 7 | 4 | 1 | 0 | 9 | 0 | 0 | 11 |
| 25—45 ,, | 289 | 13 | 1 | 0 | 64 | 6 | 21 | 2 | 4 | 41 | 9 | 5 | 0 | 23 | 17 | 22 | 0 | 27 | 0 | 0 | 34 |
| 45—65 ,, | 519 | 7 | 3 | 3 | 34 | 5 | 32 | 22 | 12 | 101 | 38 | 59 | 0 | 30 | 39 | 74 | 0 | 30 | 0 | 0 | 30 |
| 65+ ,, | 780 | 9 | 1 | 1 | 7 | 3 | 43 | 73 | 13 | 178 | 49 | 91 | 0 | 19 | 38 | 80 | 0 | 15 | 0 | 126 | 34 |
| ALL AGES, | 2564 | 209 | 27 | 6 | 156 | 71 | 211 | 149 | 40 | 340 | 104 | 157 | 48 | 103 | 187 | 179 | 132 | 106 | 70 | 126 | 143 |
| **B.—DEATH-RATE PER 100,000 OF POPULATION AT EACH AGE—YEAR 1912.** | | | | | | | | | | | | | | | | | | | | | |
| Under 1 year, | 14445 | 1390 | 491 | 0 | 27 | 218 | 1608 | 1172 | 164 | 0 | 27 | 0 | 1036 | 300 | 1772 | 0 | 3598 | 245 | 1908 | ... | 491 |
| 1—5 years, | 1561 | 619 | 20 | 0 | 27 | 155 | 310 | 47 | 20 | 13 | 13 | 0 | 61 | 47 | 108 | 7 | 0 | 67 | ... | ... | 47 |
| 5—15 ,, | 288 | 80 | 0 | 5 | 33 | 58 | 11 | 0 | 0 | 16 | 0 | 0 | 3 | 16 | 22 | 3 | 0 | 6 | ... | ... | 25 |
| 15—25 ,, | 346 | 22 | 6 | 0 | 108 | 16 | 22 | 3 | 6 | 4 | 16 | 6 | 0 | 22 | 13 | 3 | 0 | 29 | ... | ... | 35 |
| 25—45 ,, | 654 | 29 | 2·3 | 0 | 145 | 14 | 48 | 5 | 9 | 93 | 20 | 11 | 0 | 52 | 38 | 50 | 0 | 61 | ... | ... | 77 |
| 45—65 ,, | 2060 | 28 | 12 | 12 | 135 | 20 | 127 | 87 | 47 | 401 | 151 | 234 | 0 | 119 | 155 | 294 | 0 | 119 | ... | ... | 119 |
| 65+ ,, | 8894 | 103 | 11 | 11 | 80 | 34 | 490 | 832 | 148 | 2018 | 559 | 1038 | 0 | 217 | 433 | 924 | 0 | 171 | ... | 1437 | ... |
| ALL AGES, | 1558 | 127 | 16 | 4 | 95 | 43 | 129 | 90 | 24 | 206 | 63 | 95 | 29 | 63 | 114 | 109 | 80 | 64 | ... | ... | 87 |
| **C.—DEATH-RATE PER 100,000 OF POPULATION AT EACH AGE—AVERAGE FOR TEN YEARS—1902-1911.** | | | | | | | | | | | | | | | | | | | | | |
| Under 1 year, | 15652 | 1625 | 298 | 65 | 43 | 499 | 1318 | 1365 | 189 | 28 | 41 | 35 | 1192 | 369 | 2250 | 7 | 3039 | 215 | 2413 | ... | 564 |
| 1—5 years, | 1775 | 611 | 5 | 4 | 37 | 248 | 289 | 101 | 35 | 6 | 7 | 5 | 70 | 70 | 129 | 3 | 14 | 75 | ... | ... | 68 |
| 5—15 ,, | 293 | 43 | 0·3 | 4 | 38 | 65 | 18 | 4 | 5 | 19 | 6 | 0·3 | 4 | 20 | 24 | 1·4 | 1·4 | 19 | ... | ... | 20 |
| 15—25 ,, | 393 | 14 | 0·9 | 7 | 161 | 30 | 23 | 1·5 | 6 | 34 | 11 | 2·1 | 0·3 | 19 | 29 | 5 | 0·3 | 21 | ... | ... | 28 |
| 25—45 ,, | 703 | 16 | 1·4 | 20 | 197 | 23 | 56 | 15 | 11 | 84 | 35 | 13 | 0·2 | 47 | 38 | 39 | 0·2 | 44 | ... | ... | 63 |
| 45—65 ,, | 2007 | 42 | 2·1 | 18 | 151 | 14 | 131 | 126 | 49 | 400 | 118 | 172 | 1·3 | 122 | 126 | 310 | 0 | 76 | ... | ... | 149 |
| 65+ ,, | 8327 | 158 | 2·3 | 45 | 64 | 17 | 345 | 982 | 155 | 1650 | 412 | 1032 | 2·4 | 267 | 438 | 755 | 0 | 156 | ... | 1351 | 498 |
| ALL AGES, | 1599 | 129 | 9 | 14 | 123 | 65 | 120 | 117 | 27 | 181 | 52 | 84 | 36 | 67 | 131 | 96 | 77 | 52 | ... | ... | 93 |

As underfeeding is, unfortunately, a common feature of school life among the poorer children, the value of the efforts of the Children's Care Committee in assisting the nutrition of the children, and preventing that lowering of vital resistance that lends itself to the onset of many diseases, including tuberculosis, cannot be placed too highly in any public scheme for dealing with the health of the young.

*Mortality at Adolescent Age-Period* (15 *to* 25 *years).*—The death-rate at this period during the year (3·5 per 1,000 of the population at this age), is, like that at the earlier periods, distinctly under the rate (3·9) for the preceding year, as also under the average (3·9) for the previous ten years.

*Mortality at the Early-Mature Age-Period* (25 *to* 45 *years).*—The mortality (6·5 per 1,000 of the population at this period), which was in the preceding report for the first time distinguished from that of the late-mature period—the two being formerly taken together—was somewhat higher than the rate (5·7) in the preceding year, but lower than the average (7·0) for the previous ten years. The rate in the preceding year was the lowest for this period since registration began.

*Mortality at the Late-Mature Age-Period* (45 *to* 65 *years).*—The mortality (20·6 per 1,000 of the population at this period) was higher than the rate (18·8) in the preceding year, and also slightly higher than the average rate (20·1) for the previous ten years.

*Mortality at the Post-Mature Age-Period* (65 *years and upwards).*—The death-rate (88·9 per 1,000 of the population at this age) was considerably above the rate (79·1) for the preceding year. The rate for the preceding year was one of the lowest on record. The rate was also above the average (83·3) for the preceding ten years. This age-period, along with the immediately preceding age-period (late-mature), are the only two which show rates above the average for the preceding ten years.

As has been remarked in some earlier annual reports, the younger the age-period, the greater, as a rule, has been the fall in the death-rate during the past 40 to 50 years, with, however, the notable exception of the youngest age-period of 0-5 years. The percentage fall in the death-rate since the decade of 1861-1870 is for each period as follows, namely, 40 per cent. for the pre-school period, 62 per cent. for the school period, 64 per cent. for the adolescent period, 50 per cent. for the early-mature period, 12 per cent. for the late-mature period, and 6 per cent. for the post-mature period. Thus, the periods showing the greatest improvement in health during the last 40 to 50 years are the school and adolescent periods.

## Mortality in Relation to Cause.

*(Tables IV., IV.(a), V., and VI.)*

Tables IV., IV.(a), V., and VI. give details for the year, and afford also material for comparison with previous years.

As was stated in the report for the preceding year, the system of classification of the causes of death was modified last year so as to bring it into harmony with the International Classification, now in the main adopted by the Scottish Registrar-General. It is scarcely necessary to mention that in the accompanying tables the new classification has been made applicable to the figures given for all the preceding years, as well as to the figures for 1911 and 1912. In every year since 1904, and inclusive of that year, the figures have been corrected for transferred deaths.

*All Ages.*—The group of diseases producing the largest number of deaths at all ages in the year 1912 was that of the respiratory system, with 400 deaths, or nearly 1 death in every 6 of the total deaths. This is exclusive of phthisis. The deaths from diseases of the respiratory system have shown a considerable increase in recent years. In 1911, the number was 362, and in 1910, 329. Diseases of the circulatory system, from which group in the new classification there has now been dissociated apoplexy and hemiplegia, as also syncope and heart failure, caused 340 deaths, as against 311 in the preceding year. This group, therefore, also shows a considerable increase. The group of diseases of the nervous system, including cerebral apoplexy and hemiplegia, occupied the third place, with 308 deaths, as against 266 in the preceding year. Tuberculous diseases came fourth, with 227 deaths, as compared with 271 for the preceding year. Then followed the group of ordinary zymotic diseases, with 209 deaths, as against 272 in the preceding year. Diseases of the digestive system accounted for 187 deaths, or almost the same number (184) as in the previous year. Malignant diseases followed, with 179 deaths; developmental diseases, with 132; and diseases of the genito-urinary system, with 104. Venereal diseases were reported as the cause of 27 deaths, as against 17 in the preceding year and 15 in 1910. This large increase is probably in part due to the use of newer methods in the diagnosis of syphilis in its advanced and obscure stages. Septic diseases caused only 6 deaths, as compared with 14 in the previous year. The number of deaths assigned to accident or violence were considerably above the average for the preceding year, being 106, as against 82. Of these, 13 were due to burns or scalds, 32 to accidental drowning, and 10 to suicide. The deaths from drowning include 17 due to the wrecking of two vessels—the s.s. "Frederick Snowdon" and a steam drifter. Altogether, 196 deaths were ascribed to debility or inanition, of which 70 were among children under one year of age, as against 91 in the year 1911, while 126 were among persons of 65 years of age and upwards, as against 96 in the preceding year.

*Infant Age-Period (under 1 year).*—The chief cause of death at this age was prematurity, with 112 deaths (see Table IV.). In the preceding year, there were 108 deaths. Of the 112 deaths, 102 took place within the first month after birth. The next largest cause of death was diseases of the digestive system (including diarrhœa), which produced 65 deaths, as compared with 63 in the preceding year and an average of 76 for the preceding five years. Pneumonia came next with 59 deaths, as against 54 in the previous year. The deaths from bronchitis amounted to 43, or 4 more than in the preceding year and 21 more than in 1910. The number of deaths from bronchitis was not, however, above the average for the preceding five years. Wasting and debility were, as usual, a large cause of mortality, and accounted for 57 deaths. This was considerably under the number (85) for the preceding year. Zymotic diseases, especially measles and whooping cough—the former with 12 and the latter with 30 deaths—accounted for a substantial part of the infantile mortality, but rather less than the average for preceding years. There was a notable decline in the deaths from tuberculosis. Only 9 deaths were assigned to this cause, as against 21 in the preceding year, the decline being chiefly in tubercle of the brain and the abdomen. From suffocation, there were 8 deaths, or 2 more than in the preceding year and 3 more than in 1910. The deaths from suffocation are usually nearly all confined to the first three months of life, but in 1912 there were as many deaths from this cause in the later months. There was only one death from burns or scalds. In the preceding year, there was none from this cause.

The chief characteristics of the infant mortality in 1912 were, therefore, the high rate from prematurity and the somewhat low rate from diseases of the digestive system, including diarrhœa, and the decidedly low rate from tuberculous diseases.

In Table IV.(A), in which certain of the causes of death are grouped somewhat differently from those in Table IV., it will be observed that the deaths from prematurity and congenital defects, which may be regarded as in some measure beyond the control of hygienic administration, have not shown any notable decline in recent years. On the other hand, deaths from diseases of the digestive system, including wasting and debility and also convulsions, which are often associated with digestive disturbances—a group of diseases largely amenable to control—have shown an almost steady decline in recent years. Thus, the average annual number of deaths from these causes, which had been 232 in the five years 1902-1906, fell to 184 in the five years 1907-1911, and reached their lowest recorded figure (160) in 1912. This is gratifying in view of the active labours of the Health Visitors and the Mothers' and Babies' Clubs in recent years, and it is mainly in this direction that some outcome of their work would be expected to be found.

*Pre-School Age-Period* (1 *to* 5 *years).*—Of the 232 deaths at this period (Table V.), 93—or well over one-third—were due to zymotic diseases. The most active zymotics were whooping cough, with 28 deaths; measles, with 25; diphtheria, with 20; and scarlet fever, with 16 deaths. The corresponding figures for the preceding year were, respectively, 32, 72, 15, and 10. Pneumonia was also an important cause of death, producing 45 deaths, or 5 more than in the preceding year and 8 more than in 1910. Bronchitis was, however, much less prominent, only 8 deaths being attributed to it. Tuberculosis accounted for 27 deaths, 4 of which were due to pulmonary tuberculosis. In the preceding year, the number of deaths from tuberculosis was 36. In 1910, it was 30. There has, therefore, been some reduction within the last two years in the deaths from tuberculosis at this age-period. Diseases of the digestive system, including diarrhœa, accounted for 16 deaths, as against 18 in the preceding year. Only 5 deaths were attributed to burns and scalds, as against 10 in the preceding year. This is probably in some measure due to the greater attention to the protection of house fires by fire guards, as made obligatory under the Children Act.

*School Age-Period* (5 *to* 15 *years*).—Of the 105 deaths at this period, 33, or almost exactly one-third, were due to tuberculosis, which at this and the adolescent and early-mature periods of life is usually the dominant cause of death. This figure is somewhat higher than that (30) for the preceding year. The next largest cause was the ordinary zymotic diseases, which accounted for 29 deaths, as against 21 for the preceding year. Of the 29 deaths, 11 were due to scarlet fever, 9 to diphtheria, and 3 to whooping cough. Diseases of the digestive system caused 8 deaths, as against 11 in the preceding year, and diseases of the nervous system 7, as against 12. There were also 6 deaths from diseases of the circulatory system and 4 from pneumonia. There were 6 deaths from accident or violence, as against 5 in the preceding year. One of the deaths was due to burns or scalds.

*Adolescent Age-Period* (15 *to* 25 *years*).—Of the 109 deaths at this period, 39, or fully one-third, were due to tuberculous diseases, as against 56 in the preceding year and 61 in 1910. This shows a remarkable decline in the deaths from tuberculosis (which was mostly of the pulmonary form) at this age-period. Among other important causes of death at this period were diseases of the circulatory system, with 12 deaths; lung diseases, with 10 deaths; and zymotic diseases, with 7 deaths. There were 9 deaths from accident and violence, being 4 fewer than in the preceding year.

*Early-Mature Age-Period* (25 *to* 45 *years*).—Of the 289 deaths at this period, the chief contributing cause was tuberculosis, with 70 deaths, or 2 more than in the preceding year. Diseases of the circulatory system came next, with 41 deaths—a number greatly in excess of that (29) for the preceding year. Diseases of the nervous system followed, with 28 deaths, and diseases of the respiratory system (chiefly pneumonia), with 27 deaths. There was a considerable increase in deaths from diseases of the nervous system, as compared with the preceding year, when the number was 21. There was, however, a distinct drop in the deaths from diseases of the genito-urinary system. These amounted to 9, as against 19 for the preceding year. The deaths from malignant diseases showed, on the other hand, a large increase, being 22 during the year, as against 13 for the preceding year. Accident and violence accounted for 27 deaths, which were largely in excess of those for the preceding year. But, as already explained, the deaths from accident during the year were considerably augmented by two shipping disasters.

*Late-Mature Age-Period* (45 *to* 65 *years*).—Of the 519 deaths at this age-period, the cause which bulked most largely was, as usual, diseases of the circulatory system, with 101 deaths, or only 4 fewer than in the preceding year. Next came malignant diseases, chiefly cancer, with 74 deaths, as against 78 in the preceding year. Tuberculous diseases caused 39 deaths, as compared with 53 in the previous year. This represents a striking reduction. Cerebral apoplexy, which is relatively rare at earlier age-periods, caused 59 deaths. This represents a large increase, as compared with the preceding year, when the deaths from this cause numbered 40. Accident and violence were the cause of 30 deaths, the number of these being considerably up for the reason mentioned under the preceding age-period.

*Post-Mature Age-Period* (65 *years and upwards*).—Among the 780 deaths occurring at this age-period, diseases of the circulatory system were by far the dominating cause, accounting as they did for 178 deaths, or 18 more than in the preceding year. There was also a large number of deaths—namely, 129—from diseases of the respiratory system, chiefly bronchitis. In the preceding year, the number was 111. Cerebral apoplexy and hemiplegia accounted for 91 deaths, as against 95 in the preceding year; and malignant diseases caused 80 deaths, or 1 fewer than in the previous year. An exceptionally large number of deaths (126) was attributed to the vague causes of debility and old age. Accident and violence caused 15 deaths, as against 8 in the preceding year.

## VARIATIONS IN THE MORTALITY FROM SELECTED CAUSES SINCE 1856.

The variations in the mortality from selected causes at all ages since the year 1856—the second year of civil registration—can be conveniently followed in Table VI.

*Infectious Diseases*.—These are dealt with in greater detail in the succeeding part of the report devoted especially to the morbidity and mortality from zymotics. The mortality from the commoner zymotics, taken as a whole, was about equal to the average.

*Cancer and other Malignant Diseases*.—The death-rate from these causes showed a slight increase during the year, namely, to 109 from 106 per 100,000 of the population in the preceding year. The rate is only slightly above the average (107) for the preceding five years, but is nearly twice as high as the rate for the earlier years of civil registration. As is well known, there has been a steady growth of deaths from malignant diseases for a long series of years, but the growth would seem in some measure to have been checked in Aberdeen during the past six years. A largo amount of research into the nature of cancer is still being carried on in the special institutes for such research, as well as in general laboratories, but no very definite advance was recorded during the year. As has been stated in previous reports, it is highly important that, on the slightest suggestion of the occurrence of cancer, medical advice should be sought. Surgical procedure still remains almost the only certain remedy for the removal of cancer, and it ought to be employed at the earliest possible moment, before the tumour has become deeply rooted or the cancer cells been disseminated throughout the body. Removed thus early, cancer in many cases does not return, or returns only after a long interval of years. Time

## TABLE VI.—ABERDEEN.—DEATHS AT ALL AGES FROM SELECTED CAUSES (per 100,000 of population).—*Years* 1856-1912.*

| Year. | Small-pox. | Scarlet Fever. | Diphtheria and Croup. | Measles. | Whooping Cough. | Influenza. | Typhus Fever. | Typhoid Fever. | Tuberculous Diseases. | | Dis. of Digest. Sys. (incl. Diarrhoea). | Cancer and other Malignant Diseases. | Bronchitis. | Pneumonia. | Dis. of the Circul. Sys. (excl. Cereb. Apopl. and Hemipleg.). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phthisis. | Other Tuberculous. | | | | | |
| 1912, . . . | 0 | 19 | 21 | 22 | 37 | 12 | 0 | 9 | 95 | 43 | 114 | 109 | 90 | 129 | 206 |
| 1911, . . . | 0 | 15 | 14 | 74 | 47 | 10 | 0 | 2 | 116 | 48 | 111 | 106 | 88 | 109 | 188 |
| 1910, . . . | 0 | 4 | 21 | 2 | 10 | 16 | 0 | 1 | 111 | 50 | 105 | 97 | 92 | 93 | 208 |
| 1909, . . . | 0 | 8 | 20 | 20 | 69 | 17 | 0 | 3 | 110 | 54 | 119 | 111 | 110 | 131 | 192 |
| 1908, . . . | 0 | 9 | 12 | 41 | 38 | 33 | 0 | 0 | 113 | 61 | 117 | 109 | 102 | 125 | 182 |
| 1907, . . . | 0 | 3 | 12 | 22 | 50 | 14 | 0 | 4 | 117 | 71 | 106 | 110 | 116 | 121 | 161 |
| Average 1907-1911, | 0 | 8 | 16 | 32 | 43 | 18 | 0 | 2 | 113 | 57 | 112 | 107 | 102 | 116 | 186 |
| 1906, . . . | 0 | 4 | 12 | 44 | 41 | 18 | 0 | 2 | 130 | 70 | 127 | 88 | 106 | 111 | 159 |
| 1905, . . . | 0 | 7 | 6 | 21 | 21 | 21 | 8 | 2 | 127 | 62 | 149 | 90 | 129 | 131 | 173 |
| 1904, . . . | 0 | 13 | 7 | 59 | 93 | 8 | 5 | 2 | 124 | 81 | 163 | 101 | 134 | 131 | 180 |
| 1903, . . . | 0 | 8 | 8 | 74 | 27 | 14 | 0 | 2 | 144 | 65 | 166 | 71 | 147 | 114 | 181 |
| 1902, . . . | 0 | 7 | 13 | 11 | 83 | 29 | 0 | 2 | 138 | 76 | 143 | 79 | 150 | 131 | 181 |
| Average 1902-1906, | 0 | 8 | 9 | 42 | 53 | 18 | 2·6 | 2 | 133 | 71 | 150 | 86 | 133 | 124 | 175 |
| ,, 1901-1905, | 0·1 | 8 | 9 | 41 | 47 | 20 | 2·6 | 3·6 | 138 | 69 | 162 | 87 | 145 | 125 | 179 |
| ,, 1896-1900, | 0 | 23 | 18 | 35 | 53 | 29 | 0·2 | 9 | 167 | 70 | 210 | 87 | 172 | 109 | 167 |
| ,, 1891-1895, | 0·4 | 21 | 22 | 63 | 52 | 56 | 1·0 | 10 | 181 | 72 | 190 | 81 | 210 | 100 | 156 |
| ,, 1886-1890, | 0·8 | 14 | 10 | 80 | 66 | 9 | 1·4 | 15 | 184 | 67 | 202 | 68 | 216 | 100 | 175 |
| ,, 1881-1885, | 0·2 | 13 | 15 | 36 | 67 | 1 | 6 | 13 | 204 | 74 | 185 | 69 | 251 | 82 | 159 |
| ,, 1876-1880, | 0·6 | 35 | 30 | 28 | 66 | 2 | 19 | 29 | 223 | 101 | 194 | 61 | 286 | 72 | 146 |
| ,, 1871-1875 | 48 | 68 | 30 | 53 | 68 | 5 | 20 | 35 | 243 | 107 | 214 | 56 | 281 | 60 | 136 |
| ,, 1866-1870, | 3·6 | 71 | 5 | 50 | 62 | 8 | 62 | 49 | 298 | 130 | 259 | 59 | 238 | 70 | 122 |
| ,, 1861-1865, | 36 | 93 | 49 | 51 | 62 | 12 | 176 | | 274 | 128 | 280 | 57 | 220 | 59 | 122 |
| ,, 1856-1860, | 40 | 118 | 54 | 70 | 69 | 12 | 109 | | 322 | 179 | 203 | 56 | 182 | 58 | 111 |

* Corrected for transferred deaths in 1904 and subsequent years.

should not be lost in trying medicinal cures, whether by the internal administration of medicines or by their local application, for it is practically impossible to influence the course of genuine cancer by any such remedy in spite of all that may be claimed for it even by certain medical men.

*Bronchitis*, like phthisis, has been a steadily declining cause of death since near the commencement of civil registration, although in 1912 there was a slight increase as compared with the preceding year, the death-rate per 100,000 of population being 90, as against 88; but these are the two lowest rates on record. Only ten years ago, the rate was 150, while thirty to forty years ago it was upwards of 280.

*Pneumonia*, differing from bronchitis and tuberculosis, has been an increasing cause of death during the last half-century, and was in 1912, with a rate of 129 per 100,000 of population, more than twice as high as the rate in 1856-1860, which was 58. From about 1902, the growth of the rate was almost uninterrupted to the year 1909, when it reached 131. In the following year, it made a remarkable descent to 93, but in 1911 it rose to 109, and in 1912, as already remarked, it almost attained the high proportions of the year 1909 and immediately preceding years. It is difficult to account for the rapid increase within the two years ending 1912. It may be in some measure associated with a large prevalence of measles and whooping cough in 1911, but not very distinctly, for the increase was also well marked at the later age-periods of life, which scarcely suffer at all from these two diseases.

*Diseases of the digestive system* showed a death-rate of 114 per 100,000 of the population during the year, which was very slightly above the average (112) for the preceding five years, but decidedly under the average for earlier years. In 1861-1865, the rate was 280, and has more or less steadily fallen since that period up to about five years ago.

*Diseases of the circulatory system.*—Deaths from these diseases have, like deaths from pneumonia and cancer, shown a tendency to increase in recent times. The death-rate per 100,000 of population during the year was 206, which, except in the year 1910, when it was 208, is the highest rate on record. Diseases of the circulatory system are much more frequently met with among older persons than among younger persons, and, accordingly, as the average duration of life becomes extended there will appear a constantly increasing death-rate from such diseases as are more associated with advancing age.

## MORBIDITY AND MORTALITY FROM ZYMOTICS.

*(Tables VI., VII., VIII., and IX.)*

Table VII. gives the distribution of the commoner zymotics as notified or discovered in the various wards of the City during the year 1912.

## TABLE VII.—CASES OF CERTAIN INFECTIOUS DISEASES NOTIFIED OR DISCOVERED—YEAR 1912.

*(Not corrected for transferred deaths.)*

| DISEASE. | | No. of Cases at various Age-Periods. | | | | | All Ages. | Cases and Deaths per 10,000 of Population in each Ward of City.* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Under 5 years | 5-15 years | 15-25 years | 25-45 years | 45+ years | | Woodside. | St. Machar. | St. Andrew's. | St. Clement's. | Greyfriars. | St. Nicholas. | Rosemount. | Rubislaw. | Ruthrieston. | Ferryhill. | Torry. |
| Population (in thousands), Census 1911 | | ... | ... | ... | ... | ... | ... | 9·4 | 14·3 | 18·4 | 11·4 | 13·9 | 15·3 | 17·5 | 20·2 | 16·9 | 15·2 | 11·4 |
| **A. Notifiable.** | | | | | | | | | | | | | | | | | | |
| Small-pox ...... | Cases | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| | *Deaths* | | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Scarlet Fever | Cases | 287 | 638 | 123 | 51 | 3 | 1102 | 80 | 80 | 81 | 63 | 57 | 88 | 49 | 56 | 75 | 66 | 44 |
| | *Deaths* | 14 | 13 | 4 | 3 | ... | 34 | 2 | 3 | 5 | 3 | ... | ... | 2 | 0·5 | 4 | 1 | 2 |
| Diphtheria.... | Cases | 248 | 400 | 94 | 43 | 6 | 791 | 41 | 83 | 71 | 40 | 37 | 40 | 44 | 49 | 39 | 36 | 42 |
| | *Deaths* | 25 | 9 | 1 | 1 | ... | 36 | 2 | 1 | 6 | 2 | 2 | 0·7 | 2 | 1 | 3 | 0·7 | 4 |
| ‡Typhoid Fever | Cases | 7 | 36 | 36 | 29 | 12 | 120 | 6 | 8 | 9 | 10 | 8 | 8 | 9 | 4 | 4 | 5 | 12 |
| | *Deaths* | 1 | 4 | 3 | 5 | 2 | 15 | 1 | 0·7 | 1 | 0·9 | 1 | 0·7 | 0·6 | 0·5 | ... | 0·7 | 4 |
| Typhus Fever | Cases | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| | *Deaths* | ... | ... | ... | ... | ... | ... | .. | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... |
| Erysipelas ...... | Cases | 2 | 8 | 18 | 46 | 59 | 133 | 12 | 6 | 4 | 11 | 9 | 8 | 11 | 4 | 10 | 8 | 8 |
| | *Deaths* | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | 0·7 | .. | ... | ... | ... | ... |
| Puerperal Fever | Cases | ... | ... | 3 | 9 | ... | 12 | ... | 0·7 | ... | 2 | 4 | 0·7 | ... | ... | ... | 1 | 0·9 |
| | *Deaths* | ... | ... | 2 | 6 | ... | 8 | ... | 0·7 | .. | 2 | 1 | 0·7 | ... | ... | ... | 0·7 | 0·9 |
| Epidemie Cerebro-Spinal Meningitis | Cases | 1 | 1 | 2 | 1 | ... | 5 | ... | ... | 0·5 | ... | ... | 0·7 | 1 | ... | ... | 0·7 | ... |
| | *Deaths* | 1 | 1 | 2 | 1 | ... | 5 | ... | ... | 0·5 | ... | ... | 0·7 | 1 | ... | ... | 0·7 | ... |
| †Tubereulous Disease— | | | | | | | | | | | | | | | | | | |
| (*a*) Phthisis... | Cases | 15 | 89 | 114 | 181 | 96 | 495 | 39 | 34 | 27 | 28 | 45 | 44 | 33 | 21 | 27 | 19 | 19 |
| | *Deaths* | 5 | 12 | 37 | 70 | 44 | 168 | 14 | 10 | 12 | 7 | 11 | 14 | 17 | 5 | 8 | 8 | 6 |
| (*b*) Other Tub. Diseases | Cases | 51 | 73 | 25 | 17 | 7 | 173 | 11 | 13 | 14 | 18 | 13 | 10 | 9 | 4 | 12 | 5 | 10 |
| | *Deaths* | 31 | 25 | 8 | 9 | 9 | 82 | 3 | 5 | 4 | 13 | 4 | 9 | 5 | 2 | 5 | 3 | 3 |
| **B. Not Notifiable.** | | | | | | | | | | | | | | | | | | |
| §Measles ..... ... | Cases | 206 | 178 | 9 | 2 | ... | 395 | 6 | 15 | 22 | 12 | 18 | 15 | 29 | 19 | 22 | 53 | 70 |
| | *Deaths* | 39 | ... | ... | ... | .. | 39 | 1 | 1 | 2 | 3 | 1 | 7 | 0·6 | ... | 2 | 5 | 4 |
| §Whooping Cough | Cases | 510 | 417 | 1 | 2 | ... | 930 | 112 | 87 | 59 | 59 | 71 | 65 | 47 | 22 | 28 | 44 | 76 |
| | *Deaths* | 55 | 6 | ... | .. | ... | 61 | 9 | 4 | 3 | 4 | 5 | 5 | 0·6 | 2 | 2 | 5 | 6 |
| Total | Cases | 1327 | 1840 | 425 | 381 | 183 | 4156 | 307 | 328 | 288 | 243 | 261 | 280 | 221 | 178 | 217 | 239 | 283 |
| | *Deaths* | 171 | 70 | 57 | 95 | 56 | 449 | 32 | 27 | 34 | 33 | 27 | 38 | 28 | 11 | 25 | 25 | 28 |
| Influenza ......... | *Deaths* | 3 | ... | ... | 3 | 17 | 23 | 4 | 2 | 2 | 0·9 | 2 | ... | 1 | ... | 0·6 | 3 | 2 |
| Chicken-pox...... | *Deaths* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

* Deaths occurring in Hospitals are assigned to the Ward of the City from which the cases were originally removed.
† Voluntarily notifiable, with fee ; Phthisis became compulsorily notifiable on 1st August.
‡ Including Para-typhoid. § Compulsory notification of these diseases ceased in February, 1903.

WARD DISTRIBUTION.—The table also gives the distribution in the City, as a whole, of the cases and deaths according to age, and shows the number of cases and number of deaths per 10,000 of population in each of the wards.

*Scarlet Fever.*—As usual, certain wards suffered more largely than others. Thus, the wards with the largest prevalence of cases were St. Nicholas, St. Andrew's, St. Machar, and Woodside, with 88 to 80 cases per 10,000 of population; while the wards with the lowest prevalence were Torry and Rosemount, with a rate of 44 to 49. There were, however, no deaths in the ward—namely, St. Nicholas—with the highest prevalence, while the ward with the lowest prevalence had a death-rate of 2 per 10,000 of population. St. Nicholas Ward is one of the more densely populated wards.

*Diphtheria* showed somewhat similar variations. The wards with the highest prevalence were St. Machar and St. Andrew's, with 83 and 71, respectively, per 10,000 of population; while the wards with the lowest prevalence were Ferryhill and Greyfriars, with 36 and 37. Although St. Machar and St. Andrew's had both a high prevalence and are adjacent wards, the death-rate in the latter ward was six times as high as in the former.

*Typhoid Fever*, of which there had been a considerable epidemic towards the end of the year, was most prevalent in Torry and St. Clement's, and least prevalent in Rubislaw and Ruthrieston.

*Typhus Fever.*—From this disease there were no cases during the year.

*Erysipelas* was very unequally distributed among the wards, Woodside, St. Clement's, Rosemount, and Ruthrieston having each a relatively high distribution, while St. Andrew's and Rubislaw had a low distribution. There were no deaths, except in St. Nicholas.

*Puerperal Fever* was more common in Greyfriars than in any other ward. In five out of the eleven wards there were no cases. With one exception (St. Andrew's) these were the more outlying wards of the City.

*Epidemic Cerebro-Spinal Meningitis.*—There were only 5 cases of this disease during the year, but, with one exception, the several cases appeared in separate wards.

*Measles.*—The distribution of this disease in the wards of the City cannot now be ascertained with accuracy, since compulsory notification ceased in 1903. The information obtained at present of sicknesses is procured mainly through the attendance officers of the School Board. Their reports show that the Torry and Ferryhill wards suffered much more severely from measles than any other ward.

*Whooping Cough.*—The same observation applies to the notification of whooping cough as was made in connection with the preceding disease. Here also there was great inequality in the distribution of the disease among the various wards, Woodside standing very high, while Rubislaw stood low.

*Tuberculosis.*—The wards chiefly associated with pulmonary tuberculosis, or phthisis, were Greyfriars, St. Nicholas, and Woodside, which are mainly inhabited by the working classes. In these, the prevalence was twice as high as in the wards with the lowest distribution, namely, Ferryhill and Torry. The number of notified cases of tuberculosis in each ward is not, however, a safe guide as to the distribution of the disease, as there is, on the whole, a tendency to greater delay in the notification of tuberculous diseases among persons of the better-off classes. The desire to obtain sanatorium treatment through the Local Authority is an incentive to early notification in poorer families. Where the sanatorium treatment can be provided at the expense of the patient or of his friends, without any help from the Local Authority, there is usually some reluctance in notifying the case until the disease is considerably advanced. The deaths in the wards are, therefore, on the whole, a better measure of the prevalence of tuberculosis than are the notified cases. Viewed in this way, the wards that suffered most from phthisis during the year were Rosemount, St. Nicholas, and Woodside, and those that suffered least were Rubislaw and Torry.

As to deaths from tuberculous disease other than pulmonary tuberculosis, the ward that had the highest rate was St. Clement's. Here again Rubislaw—essentially an upper class ward—had much the smallest number of deaths.

*Influenza*, as judged by the deaths from it, was most common in Woodside and Ferryhill. There were no deaths from this disease in St. Nicholas or Rubislaw.

MONTHLY DISTRIBUTION.—Table VIII. gives the incidence of the commoner infectious diseases throughout the months of the year.

*Scarlet Fever.*—Following on a high prevalence of this disease in the later months of 1911, the year under review opened with a high prevalence in January, with 156 cases, which more or less continuously declined until July, when 55 cases were notified. The cases subsequently rose to 112 in October, and once more began to decline, the number in December being 75. In the preceding year there was also an autumn climax in October.

The case-mortality was very much higher in the first quarter of the year than in the last quarter. There was a total of 356 cases in the first three months and a case-mortality of nearly 6 per cent. On the other hand, during the last three months, with a total of 276 cases, the case-mortality was only about 1 per cent.

*Diphtheria* had, as usual, its highest prevalence in the autumn and winter months. The maximum was reached in October, with 106 cases. The minimum was in April, with 29 cases. As with scarlet fever, the case-mortality was much

## TABLE VIII.—PROGRESS OF CERTAIN INFECTIOUS DISEASES DURING THE TWELVE MONTHS OF YEAR 1912.

*(Not corrected for transferred deaths.)*

| DISEASE. | | 1912. | | | | | | | | | | | | Whole Year. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | January. | February. | March. | April. | May. | June | July. | August. | September. | October. | November. | December. | |
| **A. Notifiable.** | | | | | | | | | | | | | | |
| Small-pox | Cases | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| | *Deaths* | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... |
| Scarlet Fever | Cases | 156 | 105 | 95 | 85 | 100 | 81 | 55 | 68 | 81 | 112 | 89 | 75 | **1102** |
| | *Deaths* | *9* | *4* | *7* | *2* | *2* | *1* | *3* | *1* | *2* | *1* | ... | *2* | ***34*** |
| Diphtheria | Cases | 52 | 53 | 53 | 29 | 56 | 52 | 70 | 42 | 89 | 106 | 93 | 96 | **791** |
| | *Deaths* | *5* | *5* | *3* | *2* | *1* | *1* | *4* | *4* | *3* | *3* | *1* | *4* | ***36*** |
| ‡Typhoid Fever | Cases | 2 | ... | ... | 1 | 2 | ... | 7 | 2 | 1 | 54 | 43 | 8 | **120** |
| | *Deaths* | ... | ... | ... | ... | *1* | ... | *1* | ... | *1* | *2* | *10* | ... | ***15*** |
| Typhus Fever | Cases | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | **0** |
| | *Deaths* | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ***0*** |
| Erysipelas | Cases | 10 | 16 | 12 | 17 | 10 | 9 | 5 | 12 | 11 | 17 | 6 | 8 | **133** |
| | *Deaths* | ... | *1* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ***1*** |
| Puerperal Fever | Cases | ... | 1 | ... | 2 | 3 | 2 | ... | ... | ... | 1 | ... | 3 | **12** |
| | *Deaths* | ... | *1* | ... | *2* | *1* | *1* | ... | ... | ... | ... | ... | *3* | ***8*** |
| Epidemic Cerebro-Spinal Meningitis | Cases | ... | ... | ... | ... | ... | 2 | 1 | 1 | ... | ... | 1 | ... | **5** |
| | *Deaths* | ... | ... | ... | ... | .. | *1* | *2* | *1* | ... | ... | ... | *1* | ***5*** |
| Tuberculous Diseases— | | | | | | | | | | | | | | |
| *(*a*) Pulmonary | Cases | 60 | 69 | 65 | 17 | 26 | 32 | 22 | 43 | 41 | 50 | 34 | 36 | **495** |
| | *Deaths* | *17* | *20* | *13* | *13* | *16* | *15* | *16* | *8* | *11* | *15* | *12* | *12* | ***168*** |
| †(*b*) Other | Cases | 20 | 11 | 29 | 23 | 14 | 9 | 11 | 11 | 8 | 5 | 14 | 18 | **173** |
| | *Deaths* | *2* | *9* | *10* | *14* | *8* | *8* | *7* | *3* | *5* | *4* | *7* | *5* | ***82*** |
| **B. Not Notifiable.** | | | | | | | | | | | | | | |
| §Measles | Cases | 218 | 39 | 40 | 15 | 4 | ... | ... | 3 | 1 | 5 | 26 | 44 | **395** |
| | *Deaths* | *28* | *8* | *2* | *1* | ... | ... | ... | ... | ... | ... | ... | ... | ***39*** |
| §Whooping Cough | Cases | 246 | 92 | 67 | 82 | 86 | 64 | 30 | 67 | 39 | 67 | 42 | 48 | **930** |
| | *Deaths* | *12* | *6* | *5* | *4* | *1* | *10* | *8* | *5* | *3* | *2* | *3* | *2* | ***61*** |
| Total | Cases | 764 | 386 | 361 | 271 | 301 | 251 | 201 | 249 | 271 | 417 | 348 | 336 | **4156** |
| | *Deaths* | *73* | *54* | *40* | *38* | *30* | *37* | *41* | *22* | *25* | *27* | *33* | *29* | ***449*** |
| Influenza | *Deaths* | *2* | *6* | *1* | *1* | *2* | *4* | *1* | *1* | ... | *3* | ... | *2* | ***23*** |
| Chicken-pox | *Deaths* | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... |

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* Notification, previously voluntary, became compulsory, 1st August.

† Voluntarily notifiable, with fee.

§ Compulsory notification ceased in February, 1903.

‡ Including Para-typhoid.

higher in the first three months of the year than in the last months. During the first three months, with 158 cases, the mortality amounted to fully 8 per cent., while during the last three months, with 295 cases, the case-mortality was well under 3 per cent.

*Typhoid Fever.*—Owing to a somewhat alarming outbreak of this disease in the last months of the year, to which fuller reference will immediately be made, the prevalence in these months greatly exceeded that of the earlier months. During the first six months, there had been only 5 cases, while in the last three months there were 105.

*Typhus Fever* produced no cases.

*Erysipelas* had two monthly maxima during the year, namely, in April and in October—each with 17 cases; and two minima, namely, in July and in November, with 5 and 6 cases, respectively.

*Puerperal Fever* was most prevalent in the second quarter of the year, when there were 7 cases, and in December, when there were 3 cases.

*Epidemic Cerebro-Spinal Meningitis* gave two cases in the month of June, followed by one case in each of the next two months, and later on by one in November. The other months were free from this disease.

*Measles*, which had been heavily epidemic in the last months of 1911, yielded 218 known cases in January of 1912; but the cases rapidly fell in number in the immediately succeeding months, until in June and July there were no cases. In the last months of the year there was a slight recrudescence of the disease, rising to 44 cases in December.

*Whooping Cough*, which had shown more than average prevalence during the greater part of the preceding year, produced 246 known cases in January. Here also the cases subsequently became much reduced, and fell to 30 in July.

Owing to the notification of measles and whooping cough no longer being compulsory, the cases are known to the Department only through an arrangement with the school attendance officers. The number of cases reported is, therefore, greatly under the number of cases actually occurring.

COMPARISON WITH PRECEDING YEARS.—Table IX. contains a comparison of the prevalence of the more important zymotics in 1912 with their prevalence in each of the preceding ten years. The average for these ten years and for the previous decade is also given. The number of sicknesses is stated for each disease, with the number of deaths, as also the case-mortality or percentage of deaths to sicknesses. Compulsory notification of measles and whooping cough having been discontinued in February, 1903, information in regard to these cases, as has just been stated, is

## TABLE IX.—MORBIDITY AND MORTALITY OF SEVEN PRINCIPAL INFECTIOUS DISEASES DURING EACH YEAR FROM 1902 TO 1912, INCLUSIVE.

(*Not corrected for transferred deaths.*)

| DISEASE. | | 1912 | 1911 | 1910 | 1909 | 1908 | 1907 | 1906 | 1905 | 1904 | 1903 | 1902 | ANNUAL AVERAGE. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | 1902 to 1911. | 1892 to 1901. |
| **A. Notifiable.** | | | | | | | | | | | | | | |
| Small-pox, | No. of Sicknesses, | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0·4 | 1·6 |
| | No. of Deaths, ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0·3 |
| | Percent. of Deaths to Sicknesses,... | 0 | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | 0 | 18·7 |
| Scarlet Fever, ... | No. of Sicknesses, | 1102 | 1257 | 674 | 1029 | 1262 | 492 | 151 | 215 | 589 | 465 | 321 | 645·5 | 756 |
| | No. of Deaths, .. | 34 | 25 | 7 | 11 | 17 | 5 | 6 | 11 | 21 | 13 | 11 | 12·7 | 26 |
| | Percent. of Deaths to Sicknesses,... | 3·1 | *2·0* | *1·0* | *1·1* | *1·3* | *1 0* | *4·0* | *5·1* | *3·6* | *2·8* | *3·4* | 2·0 | 3·5 |
| Diphtheria, | No. of Sicknesses, | 791 | 356 | 299 | 291 | 280 | 196 | 244 | 166 | 170 | 182 | 180 | 236·4 | 125 |
| | No. of Deaths, ... | 36 | 24 | 37 | 35 | 21 | 19 | 18 | 10 | 12 | 13 | 20 | 20·9 | 28 |
| | Percent. of Deaths to Sicknesses,... | 4·5 | *6·7* | *12·4* | *12·0* | *7·5* | *9·7* | *7·4* | *6·0* | *7·1* | *7·1* | *11·1* | 8·8 | 22·0 |
| Typhoid Fever (including Para-Typhoid), | No. of Sicknesses, | 120 | 37 | 21 | 34 | 16 | 24 | 16 | 23 | 37 | 26 | 46 | 28·0 | 109 |
| | No. of Deaths, ... | 15 | 4 | 2 | 5 | 0 | 7 | 4 | 4 | 4 | 4 | 3 | 3·7 | 13 |
| | Percent. of Deaths to Sicknesses,... | 12·5 | *10·8* | *9·5* | *14·7* | *0* | *29·2* | *25·0* | *17·4* | *10·8* | *15·4* | *6·5* | 13·2 | 11·6 |
| Typhus Fever, ... | No. of Sicknesses, | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 98 | 34 | 0 | 0 | 13·5 | 6·2 |
| | No. of Deaths, ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 9 | 0 | 0 | 2·3 | 0·9 |
| | Percent. of Deaths to Sicknesses,... | 0 | *0* | *0* | *0* | *0* | *0* | *0* | *14·3* | *26·5* | *0* | *0* | 17·0 | 14·5 |
| **B. Not Notifiable.** | | | | | | | | | | | | Notification Compulsory. | | |
| Measles, ... | No. of Sicknesses, | 385 | 5232 | 51 | 680 | 1346 | 453 | 2093 | 370 | 1913 | 3246 | 1999 | 1738·3 | 2733 |
| | No. of Deaths, .. | 39 | 121 | 4 | 33 | 66 | 36 | 72 | 33 | 95 | 118 | 18 | 59·6 | 74 |
| | Percent. of Deaths to Sicknesses,.. | 10·1 | *2·3* | *7·8* | *4·9* | *4·9* | *7·9* | *3·4* | *8·9* | *5·0* | *3·6* | *0·9* | 3·4 | 2·7 |
| Whooping Cough, ... | No. of Sicknesses, | 930 | 1367 | 234 | 1104 | 713 | 669 | 840 | 232 | 1696 | 507 | 3645 | 1100·7 | 1492 |
| | No. of Deaths, ... | 61 | 77 | 18 | 113 | 64 | 83 | 66 | 34 | 150 | 43 | 129 | 77·7 | 72 |
| | Percent. of Deaths to Sicknesses, | 6·6 | *5·6* | *7·7* | *10·2* | *9·0* | *12·4* | *7·9* | *14·7* | *8·8* | *8·5* | *3·5* | 7·1 | 4·8 |
| Totals, ...... | No. of Sicknesses, | 3328 | 8252 | 1279 | 3138 | 3617 | 1835 | 3344 | 1104 | 4442 | 4426 | 6191 | 3762·8 | 5202 |
| | No. of Deaths, ... | 185 | 251 | 68 | 197 | 168 | 150 | 166 | 106 | 291 | 191 | 181 | 176·9 | 213 |
| | Percent. of Deaths to Sicknesses,... | 5·6 | 3·0 | 5·3 | 6·3 | 4·6 | 8·3 | 5·0 | 9·6 | 6·6 | 4·3 | 2·9 | 4·7 | 4·1 |

now being obtained mainly from the school attendance officers. This affects the case-mortality from these two diseases, as, since 1903, the cases intimated are fewer in proportion to the cases actually occurring than in the preceding years of compulsory notification. This tends to heighten the apparent case-mortality in the years since 1903, as the information regarding the deaths has been as complete in the one period as in the other.

The table also shows that during the year 1912 the total known cases (3,328) of the seven more common zymotics were somewhat under the average annual number (3,763) in the preceding decade 1902-1911, but considerably under the average (5,202) for the decade 1892-1901. The most prevalent zymotic, as judged by the notified cases, was scarlet fever, but it is not improbable that if all the cases of whooping cough had been known, this disease might have stood at the head. There was also a high prevalence of diphtheria, and an exceptional prevalence of typhoid due to a special outbreak. It thus happened that during the year several of the commoner zymotics simultaneously exhibited an epidemic prevalence.

*Small-pox.*—For five years there has been no case of this disease in the City, the last being in 1907. Excepting this case, which was that of a foreign sailor, there have been none since 1904, and only 4 cases in all during the last ten years.

VACCINATIONS.—Since the passing of the Vaccination (Scotland) Act, 1907, I have, by the authority of the Town Council, been obtaining quarterly from the registrars the number of children regarding whom the parents have declared formally that they had conscientious objection to their vaccination. The accompanying table (Table X.) shows the proportion of vaccinations to surviving children in each year from 1907 to 1911, and, for comparison, in 1880, 1890, 1900, and 1906. The new Act did not come into operation until the later part of 1907, but it provided for a declaration being accepted in regard to children born previously who had so far remained unvaccinated. The numbers given for the years 1907 and subsequent years, however, apply only to children born within the particular year. In addition to those included in the table, declarations were made on account of some children born before 1907.

As has been stated in preceding reports, the figures for vaccinations given by the Registrar-General refer only to the vaccinations that have taken place within the year of birth and the subsequent year. They take no account of primary vaccinations performed at a later age, although these are registered by the local registrars and increase sensibly the proportion of vaccinated children. In the table accompanying this report, these later vaccinations, so far as occurring before the end of 1912, have been included in each of the relative years. For example, in 1910, the proportion of successful vaccinations, as stated by the Registrar-General, was 80, but it has been raised to 82 by the vaccination in 1912 of some of the children of the year 1910.

The number of conscientious objectors continues steadily to increase. In the first year of the new Act, it amounted to only 2·1 per cent. In successive years up

TABLE X.—ABERDEEN.—NUMBER AND PERCENTAGE OF VACCINATIONS.

| | | 1880. | 1890. | 1900. | 1906. | 1907. | 1908. | 1909. | 1910. | | | | | | 1911. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Whole City. | Whole City. | Whole City. | Whole City. | Whole City. | Whole City. | Whole City. | Registration Districts. | | | | | **Whole City.** | Registration Districts. | | | | | **Whole City.** |
| | | | | | | | | | St. Nicholas. | St. Machar. | Woodside. | Old Aberdeen. | Nigg and Peterculter. | | St. Nicholas. | St. Machar. | Woodside. | Old Aberdeen. | Nigg and Peterculter. | |
| **Children Born** ... ... ... | | 3613 | 3447 | 4807 | 4710 | 4504 | 4450 | 4492 | 1651 | 1936 | 249 | 79 | 385 | 4300 | 1568 | 1830 | 195 | 65 | 370 | 4028 |
| Died before Vaccination ... ... | | 348 | 406 | 568 | 535 | 470 | 511 | 526 | 217 | 168 | 24 | 5 | 34 | 448 | 223 | 179 | 19 | 11 | 46 | 478 |
| **Surviving Children*** ... ... | | 3265 | 3041 | 4239 | 4175 | 4034 | 3939 | 3966 | 1434 | 1768 | 225 | 74 | 351 | 3852 | 1345 | 1651 | 176 | 54 | 324 | 3550 |
| A. Successfully Vaccinated | Number†(*a*)<br>(*b*) | 3221<br>.. | 2927<br>... | 4079<br>... | 3790<br>... | 3455<br>167 | 3352<br>110 | 3382<br>77 | 1126<br>14 | 1420<br>26 | 197<br>6 | 63<br>3 | 283<br>7 | 3089<br>56 | 1086<br>... | 1315<br>... | 142<br>... | 41<br>... | 252<br>... | 2836<br>... |
| | Percentage of (*a*) + (*b*) | 99 | 96 | 96 | 91 | 90 | 88 | 87 | 80 | 82 | 90 | 89 | 83 | 82 | 81 | 80 | 81 | 76 | 78 | 80 |
| B. Insusceptible of Vaccination | Number ... | 7 | 4 | 5 | 3 | 11 | 9 | 14 | 9 | 5 | ... | ... | ... | 14 | 4 | 7 | 1 | ... | ... | 12 |
| | Percentage | 0·2 | 0·1 | 0·1 | 0·07 | 0·3 | 0·2 | 0·4 | 0·6 | 0·3 | ... | ... | ... | 0·4 | 0·3 | 0·4 | 0·6 | ... | ... | 0·3 |
| C. Not Vaccinated—Statutory Declaration of Conscientious Objection | Number ... | ... | ... | ... | ... | 84 | 219 | 339 | 104 | 201 | 17 | 7 | 33 | 362 | 111 | 213 | 25 | 11 | 46 | 406 |
| | Percentage | ... | ... | ... | ... | 2·1 | 5·6 | 8·5 | 7·3 | 11·4 | 7·6 | 9·5 | 9·4 | 9·4 | 8·3 | 12·9 | 14·2 | 20·4 | 14·2 | 11·4 |
| D. Remainder of Surviving Children | Number ... | 37 | 110 | 155 | 382 | 317 | 250 | 156 | 181 | 116 | 5 | 1 | 28 | 331 | 144 | 116 | 8 | 2 | 26 | 296 |
| | Percentage | 1·1 | 3·6 | 3·7 | 9·1 | 7·9 | 6·3 | 3·9 | 12·6 | 6·6 | 2·2 | 1·4 | 7·9 | 8·6 | 10·7 | 7·0 | 4·5 | 3·7 | 8·0 | 8·3 |

* At end of calendar year succeeding year of birth.

† (*a*) Number from Registrar-General's Returns; (*b*) Number vaccinated after close of year following year of birth, and up to end of 1912.

to 1911 it has risen through 5·6, 8·5, and 9·4 to 11·4 per cent. of the total surviving children at the end of the calendar year following the year of birth; or, to state it somewhat differently, while in 1907 there were only 84 conscientious objectors, they had increased to 362 in 1910 and 406 in 1911. During the first three years of the new Act, the conscientious objectors were largely drawn from among the class of parents that had formerly contrived to avoid vaccination of their infants. Thus, although in 1909 the percentage of declarations of conscientious objection was 8·5 per cent., the percentage of successful vaccinations, as compared with the year immediately preceding the operation of the Act, was reduced by only 4 per cent. This observation, however, is no longer true of the years 1910 and 1911. The number of children remaining unvaccinated, with regard to whom no declaration of conscientious objection has been made, has in these two years practically resumed the dimensions prevalent in the years immediately preceding the commencement of the Act. Probably, and somewhat naturally, the responsible authorities may have become less urgent in the search for unvaccinated children, seeing that the parents have a ready escape from vaccination under the new Act.

*Measles.*—The preceding year had witnessed a quite exceptional prevalence of this disease, the number of known cases amounting to 5,232, which was probably considerably under the real number, since notification is not compulsory. Except for the first months in 1912, which saw the tail of the epidemic, there was practically no epidemic prevalence of measles during the year. The total cases amounted to 385, but of these more than one-half occurred in January. The mortality was apparently high, with 39 deaths, giving a percentage of fully 10, but this was undoubtedly apparent and not genuine, as it was calculated upon an incomplete statement of the sicknesses actually occurring. As usual, the deaths were mainly among young children. Indeed, the whole of the deaths were confined to children under 5 years of age, although nearly one-half of the cases were among persons above that age. Among children under 5 years of age, the deaths were mainly concentrated upon the first two years of life. At these years, there were 30 deaths out of the total of 37.

*Whooping Cough* had also, like measles, been epidemic during the preceding year, but not nearly to the same extent, the known cases numbering 1,367. In 1912, there were 930 cases, but one-half of these occurred during the first four months of the year. The case-mortality was 6·6 per cent., and was somewhat under the average for recent preceding years, even when allowance is made for incomplete notification of the sickness. Of the 61 deaths that occurred, 58 were among children under 5 years of age, and of these 58 deaths no fewer than 49 were among children under 2 years of age. Only 3 deaths were among persons above that age, even although the sicknesses among such persons were nearly as numerous as those among children under 5.

*Scarlet Fever*, which is, of course, one of the compulsorily notifiable diseases, and which is, therefore, practically fully notified, has continued for the past five years to be more than usually prevalent in the City. The number of cases during 1912 was 1,102, and was only a little less than the number (1,257) in the preceding year. During the five years ending 1912, there was a total of 5,324 notified cases of scarlet fever, as against 1,912 cases in the preceding five years. During 1912, there were 34 deaths, giving a case-mortality of 3·1 per cent. This is higher than in any year since 1906. It is interesting to note that during the past five years of high prevalence the average case-mortality has, on the whole, been low, amounting to slightly under 1·8 per cent. In the preceding five years, it averaged 2·9 per cent.

*Diphtheria* has shown, unfortunately, a decided tendency towards increase of prevalence during the past two years. In 1910, the number of cases was 299, which up to that year was the highest number for several years, although not greatly above the figure for each of the preceding four years. But in 1911 the number of cases rose to 356, and in 1912 to 791. In view of the number of deaths in 1912, namely, 36, being scarcely greater than in the years 1909 and 1910, the suggestion naturally occurs that the increase of cases may in part be accounted for by the inclusion in the notifications of an increasing proportion of mild cases, due to an increasing resort by medical men to bacteriological diagnosis. But facilities for such diagnosis have been freely provided for about fourteen years. There can scarcely be any doubt that there has been a real increase of diphtheria more recently, although, fortunately, so far of a mild type. The case-mortality in 1912 was 4·5 per cent., as against an average of 8·8 for the preceding ten years. Antitoxin has, of course, been in free use during all these years.

As regards the prevalence of diphtheria in relation to the schools, it may be stated that out of 791 cases notified, 376—or somewhat less than one-half—were of children attending school. Practically no school of importance escaped having one or more cases, although the incidence was undoubtedly more marked in some schools than in others. King Street School had 35 cases; Sunnybank, 32; Frederick Street, 25; Old Aberdeen, Rosemount, and Walker Road, 19 each; Kittybrewster, 17; Ashley Road, 15; Causewayend, 14; Woodside, Ruthrieston, and Skene Square, 13 each; Ferryhill, 12; St. Peter's, 10; and George Street, 10. Whitehall Industrial School had 16 cases. In the remaining schools, the numbers varied from 1 to 9. There were several consultations with the School Medical Officer as to the precautions to be taken in the schools to prevent the spread of infection, and every suggestion made was carried out. Throat swabbings of contacts were made in several instances.

As indicating the degree of infectiousness within single families, it may be stated that the total number of families infected by diphtheria during the year was 747, of which 672, or 90 per cent., had only one case; 53 families, or 7 per cent., had two cases; and 22 families, or 3 per cent., had three or more cases. In the preceding year, the corresponding percentages were 83, 14, and 3 per cent., respectively.

The Public Health Department continues to supply gratuitously, to every practitioner desiring it, antitoxin for the treatment of private cases, as also to lend a sterilised syringe for the injection of the antitoxin. We have still to express regret that fuller advantage is not being taken of this privilege, so as to secure the earliest possible treatment of the case. For example, in 1912, out of the 791 cases reported, in only 45 was antitoxin applied for. It may be said that antitoxin was being used from private supplies, but information as to the cases admitted to the City Hospital shows that in only 6 per cent. of these had antitoxin been given before admission. It may be added that, of the 791 cases occurring in the City during the year, 727—or about 10 out of every 11 cases—were removed to the City Hospital for treatment.

The parents are in many cases to blame for delay in the use of antitoxin treatment—which, as is well known, is mainly effective during the first two days of the illness—in not recognising the serious nature of the illness at the beginning, and in not calling in the doctor sufficiently early.

*Typhoid Fever*, as already indicated, burst into an epidemic in the later part of the year. A special detailed report of the epidemic was specially prepared and submitted to the Town Council, and was accompanied by a chart in which the progress of the epidemic from its beginning to its close could be exactly followed. Only a few of the salient points in the epidemic may here be noted.

For the ten years preceding 1912, Aberdeen had been comparatively free from typhoid. The average number of cases for these years was only 28, and in no single year did the number exceed 46. During the first nine months of 1912, this relative freedom from typhoid had continued, and only 15 cases had been notified, but about the middle of October there came a rush of notifications which gave 30 cases within a week. The investigation of these and subsequent cases showed that the epidemic had its real beginning on the 22nd day of September, when 3 of the cases developed their first symptoms. During the next twenty-one days, fresh cases began in each day to the number of one to four, yielding a crop of upwards of 50 cases within the three weeks. After this period the number of cases began to wane, so that during the next three weeks there were only about 30 cases, including 5 secondary cases in families in which cases had occurred earlier in the epidemic. If all obvious secondary cases are omitted, the epidemic may be said to have closed during the first week of November, or about six weeks after its commencement.

As the cases were freely removed to hospital immediately after notification—the proportion of removals amounted to 90 per cent. of the total known cases—it was possible to make full examination, both clinically and bacteriologically, of almost every case, and it was exceedingly interesting to find as the result of the very careful and repeated bacteriological examinations by thoroughly competent observers in the bacteriological laboratories of the University, that there existed along with the typhoid cases a certain number of undoubted para-typhoid cases, the bacillus in which was of the type B. If every case of typhoid or para-typhoid notified in the City between 22nd September and the end of the first week of December be regarded as belonging to the epidemic, although there were only a few isolated cases after the first week of November, the total cases in the epidemic may be put at 101. Of these, 88 were genuine typhoid cases, while 13 were cases of para-typhoid. Of the

88 typhoid cases, 15 were secondary in the sense that they occurred after a sufficient interval for incubation from the time of the commencement of the first case in the household.

The para-typhoid cases were in the main confined to one district in the City, and all the cases except the first case received their milk exclusively or in part from one dairy. One-half of the cases had no other milk supply. This would appear to suggest that the para-typhoid infection had been conveyed in this milk supply, but as the cases showed practically no clumping in their distribution in time—the first case occurring on 24th September and the last on 25th November—and as the cases were, as remarked, mainly within one area of the City, there is also a suggestion of the disease having spread by contact infection; but careful inquiry did not elicit proof of such contact except for two patients who lived in the same tenement house, but the one took ill only one day after the other. As the period of incubation of para-typhoid is probably not less than a week, neither case would appear to have been the source of infection for the other. On the whole, therefore, the milk theory of the infection is probably the correct one. An interesting account of the para-typhoid cases, especially of their bacteriology, was prepared by my University assistant, Dr. James Watt, and was published in the *Lancet* of 19th July, 1913.

As regards the genuine typhoid cases, the source of the infection was not altogether free from doubt. There were some grounds at first for associating it with a milk supply from a large creamery in the country. This creamery drew its own supply from 32 farms in its vicinity, and sent the milk for the most part to the City of Aberdeen, where it was distributed among several dairies, including nearly all the larger dairies. As these dairies received their milk supply in part from other sources—in some cases, from numerous other sources—it was exceedingly difficult to unravel with exactness the relationship between the typhoid outbreak and the milk supply of the City. One of the dairies in the country which supplied the creamery also sent part of its milk direct to a large dairy in the City, which dairy was as freely associated with the typhoid cases as the other dairies obtaining milk from the creamery. As this City dairy received no milk from the creamery, there was a strong suggestion of this particular dairy farm in the country being the source of the infection, but there was no history of typhoid at the farm, and the mother of the farmer, a woman of advanced years, although she had suffered from typhoid early in life, could not be proved to be a typhoid carrier, so far as a single examination of the excreta could be held to constitute proof. She refused to give facilities for further examinations.

An exhaustive investigation of the relation of the milk supply to the typhoid cases, and of the possible distribution of the milk from the suspected dairy through the creamery and the large city dairies supplied in part from it, disclosed the possibility of an extensive possible relationship between the milk from this farm and the whole inhabitants of the City, irrespective of typhoid distribution. To test the extent of this relationship, 100 consecutive cases of scarlet fever, as also 100 consecutive cases of diphtheria, as they were found occurring during the time of the typhoid outbreak, were investigated with the same fulness and minuteness in regard to milk supplies as had been done for the typhoid cases. It was found that 72 per cent. of the diphtheria cases and 66 per cent. of the scarlet fever cases could be brought into possible association with the milk supply from the suspected farm. The degree of association in the typhoid cases was not much higher. It was 77 per cent. over the whole of the cases of typhoid (excluding the secondary cases) of the epidemic. Moreover, the proportion during the first half of the epidemic was not higher than during the second half, which it invariably is in a milk epidemic, owing to a growing infusion of known and unknown contact cases of infection in the later stages of the epidemic. The evidence in favour of milk infection was, therefore, not conclusive.

A more likely source of the infection was the pollution of the water supply of the City. For, although not known in the earlier stages of the epidemic, it was later on discovered that there had been a possible pollution of the River Dee, from which the City draws its water supply, by the bursting into the Dee, or a tributary of it, of the contents of a drain from the District Fever Hospital and two adjacent slaughter-houses, at Aboyne. A patient notified as suffering from typhoid fever had been admitted to the Hospital on 24th August, and was discharged on 19th October. The patient had previously come from Toronto, where there was an epidemic of typhoid, and his mate with whom he lodged in Toronto was ascertained to have developed typhoid shortly after the patient left Canada. The period elapsing between the time of his leaving Canada and of the first symptoms of illness after his arrival in Aboyne was consistent with infection in Toronto; and, although the case was not in every respect a typical one clinically, two out of three Widal blood tests gave a distinct positive reaction, and there seems to be little room for doubt that the patient was suffering from typhoid. The hospital drain had been choked at a point close to where it crossed the tributary of the Dee in order to reach the Aboyne sewage farm, and when it burst there was a discharge into the burn of a considerable accumulation of sewage.

The burst of the drain was first observed on the 11th of September, but there is reason for believing that it was not likely to have taken place more than two to three days before this date. The first cases in the epidemic of typhoid in Aberdeen became ill on 22nd September, or 11 to 12 or 13 days after the burst took place.

The point of pollution of the river water was about 9 to 10 miles above the point of intake at Cairnton of the City's water supply from the River Dee. From the rate of flow of the river, I estimated that the polluted water could have reached the intake at Cairnton in about 6 to 7 hours. From Cairnton the water supply of the City passes by a short aqueduct of less than a mile in length into the Invercannie reservoir, with a storage capacity of about two days' supply for the City, and subsequently descends through the main aqueduct, about 18½ miles in length, to the service reservoirs within the City. The City has three zones of water supply from three sets of reservoirs at different heights. The reservoirs have not in all cases the same relative capacity to the consumption of water in the areas which they supply. Allowing for the size of the reservoirs, the water as polluted at Aboyne could theoretically have reached the house taps of the City in 6½ days for the mid zone as also for the low zone, except a small part supplied from a separate reservoir at Cattofield. In the Cattofield area, nearly 13 days would have been required for the passage of the polluted water. In the area of the high zone, which is a small one, the corresponding time would be 11 days. It was exceedingly interesting to find that, if the secondary or contact cases of typhoid be excluded, there were no cases of typhoid reported within the area of the high zone water supply, and only one possible case—which was subsequently admitted by the medical attendant to have been probably not a case of typhoid—in the Cattofield area. The cases were, therefore, virtually confined to those parts of the town that fell within the low zone area (excluding Cattofield) and the mid zone area.

This distribution of the cases favours the theory of water infection, as it has been repeatedly demonstrated that typhoid organisms rapidly die out when placed in water, and that few, in ordinary circumstances, remain after a week or ten days. It is intelligible, therefore, how that the typhoid pollution could have become inactive within those areas of the City which the water supply was belated in reaching, while still retaining at least some part of its activity in such areas as the water reached within a week or thereby.

It is an interesting fact, as distinguishing the superimposed para-typhoid outbreak from the typhoid outbreak, that a considerable proportion of the para-typhoid cases occurred within the Cattofield area, and that none occurred in the area of the mid zone.

The only further point of importance in relation to the water theory is in regard to the minimum period of incubation of typhoid fever. If the pollution at Aboyne occurred, say, 12 days before the first case in the epidemic in the City, and if some 6½ days were required for the passage of the polluted water to the City taps, then somewhat less than 6 days were left as the minimum period of incubation of the disease. The usual period of incubation for typhoid is stated at about 10 to 14 days, but there is good authority for asserting that the minimum may be as low as 6 or 7 days, or as high as 3 weeks. This comes exceedingly close to the period already stated for the passage of the polluted water from Aboyne to the City. Allowance has to be made for the fact that the water in its passage through the Invercannie reservoirs and the service reservoirs was not, all of it, equally detained in the reservoirs owing to the usual tendency in such reservoirs to a part of the entering water short-cutting through the reservoir, and also to the fact that the precise date of the burst of the drain at Aboyne was not ascertainable. Full details in regard to all the points bearing on the milk theory and the water theory are given in the special report referred to, but the conclusion would seem to be, on the whole, as stated in that report, that the outbreak of typhoid in the City had its origin in the accidental pollution, at Aboyne, of the River Dee.

There has been no filtration of the water supply for many years, although filter beds were laid down when the present system of water supply was introduced in 1866. The filters, which were adequate for dealing with the whole supply in 1866, gradually became insufficient owing to the rapid growth of the town and the increasing quantity of water taken from the river. For many years the City has been dependent for its protection from water-borne disease on the provision of irrigation farms for dealing with the sewage of the small towns in the valley of the Dee above the intake of the City water supply, and on a supervision of all possible minor sources of pollution, conjoined with the effect of the storage of the water in the collecting reservoir at Invercannie and in the distributing reservoirs within the City. With the increasing consumpt of water by the City, without a corresponding increase of storage accommodation, the storage effect has been gradually becoming less, until it would appear as if the limit of safety had been reached in so far as concerns the effect of the duration of storage on the elimination of the organisms of water-borne disease.

The possible danger of the present water supply has been repeatedly referred to in these annual reports, and measures had been for some years in contemplation by the Town Council for increasing and purifying the water supply. As stated in the report for the preceding year, the Town Council had approached Parliament with a view to obtaining power to introduce an entirely new water supply from the Avon, but the Bill for this purpose was rejected by a Committee of the House of Lords. The Town Council have since been closely occupied with the question of the water supply, and have been directing their attention more particularly to a proposal to increase the supply from the present source and to provide means for its proper purification. The purification is meanwhile being temporarily attained by means of the excess lime process with which the name of Dr. Houston, Examiner for the Metropolitan Water Board, is associated.

*Typhus Fever.*—There were no cases of this disease during the year. In the preceding year, there had been 3 cases, all of which occurred, however, in one family. During the five years anterior to that year, there had been no known cases.

*Epidemic Cerebro-Spinal Meningitis.*—The cases of this disease during the year amounted to 5, as against 2 in the preceding year. In 1910, 4 cases were notified, while in 1909, there were 18 cases. The 5 cases notified during the year all died. In 1911, one of the two cases died. The first case notified was a man, aged 31, a carter by occupation, who resided in the centre of the City. He died in hospital on the day of his admission. The second case, which was that of a cycle mechanic, aged 24, died four days after admission. The third case—a scholar, aged 12½—died thirty-one days after admission to hospital. The fourth case was that of an apprentice carpenter, aged 17, who died four days after admission; while the fifth was a married female, aged 42, who also died six days after being admitted. Two other suspected cases were admitted to hospital, but these were, on bacteriological examination, found not to be genuine cases. As in preceding years, no case has been regarded as suffering from this disease unless the micro-organism was found in the cerebro-spinal fluid. Of the five cases notified, no two occurred in the same family, nor was there any known communication between the cases. The usual precaution was taken in every case of swabbing, for bacteriological examination, the throats of all family contacts, but in no instance was the meningococcus found.

*Erysipelas* has shown a small but steady decline during the past two years. In 1912, the number of reported cases was 133; in 1911, it was 142; and in 1910, it was 159. The mortality has undergone even greater reduction proportionately. In 1912, only 1 of the cases died; in 1911, 3 deaths; and in 1910, 2 deaths. In 1909, there had been 150 cases, with 5 deaths; and in 1908, 156 cases, with 7 deaths. The decline in the case-mortality of erysipelas is probably in part due to the removal in more recent years of most of the more serious cases, at least among the poorer classes, to the City Hospital, where it has been possible to give them much better nursing than could be obtained at home. Several of the cases were associated with suppurating or sloughing conditions that require considerable medical care.

*Puerperal Fever.*—Twelve cases of this disease came to the knowledge of the Department, as against 11 in 1911 and 6 in 1910. There were 8 deaths. As usual, few of the cases were notified by the medical attendant, and the knowledge of the cases was chiefly obtained from the intimations made under agreement with the registrars, who at once inform the Department of every death of a woman occurring within four weeks after child-birth; but no case is classified as one of puerperal fever without consultation with the medical attendant or without his consent. In every case, the articles of clothing were at once disinfected, and the nurse or midwife removed to the City Hospital for the thorough disinfection of her clothing, and especially of her hands.

As already mentioned, the majority of the cases occurred in the spring months.

*Influenza* was registered as the cause of 23 deaths during the year, or 4 more than in the preceding year, but 4 fewer than in 1910. Of the cases, 3 were of children under 5 years of age, and 17 were of persons above the age of 45 years.

## TUBERCULOUS DISEASE.

There was a marked and gratifying reduction in the deaths from all forms of tuberculosis during the year, as compared with the preceding year, the number being 227, as against 271 in the preceding year and 265 in 1910. This is equal, for the past year, to a death-rate of 138 per 100,000 of the population, as against 164 in the preceding year and 161 in 1910.

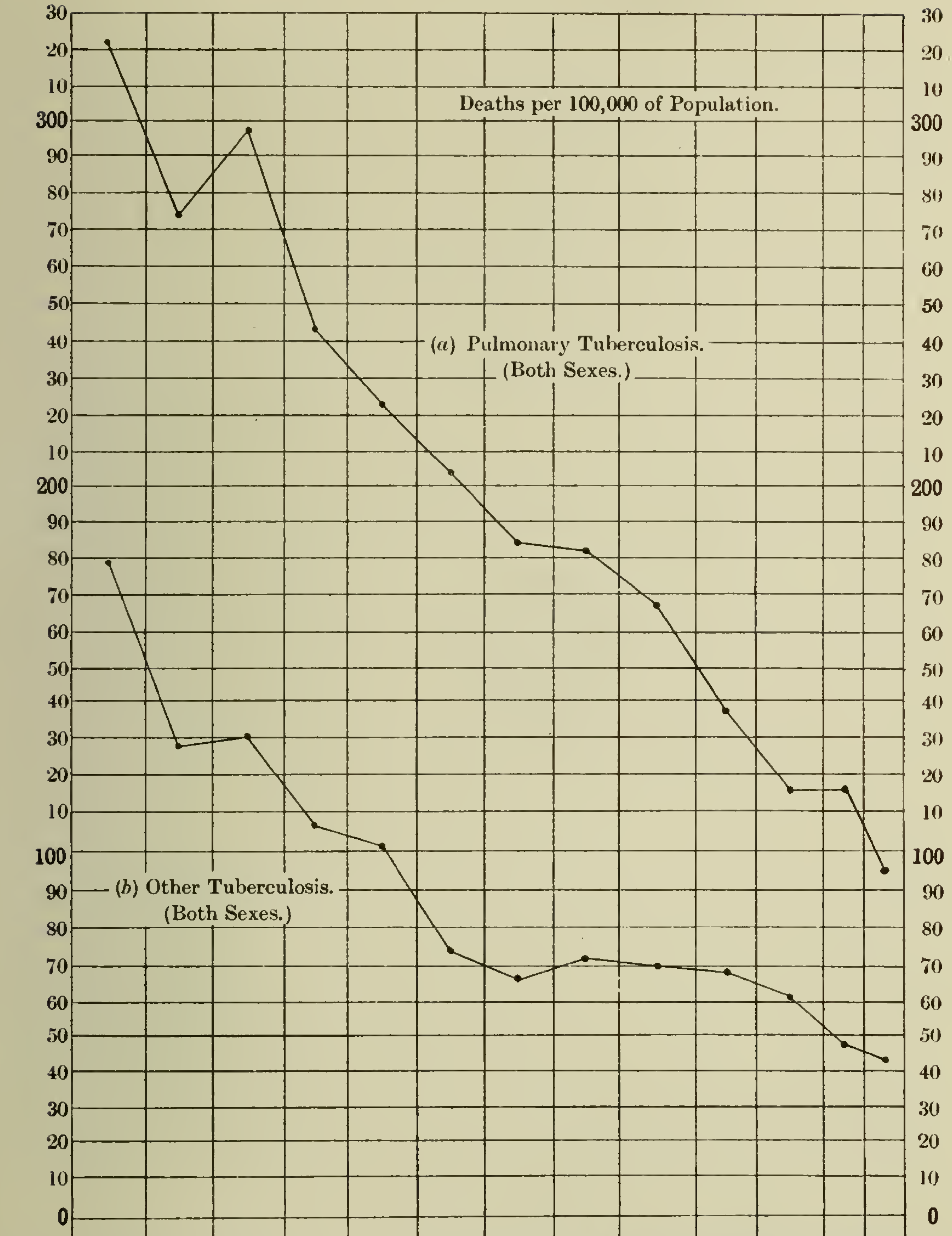
In regard to deaths from the pulmonary forms of tuberculosis, they numbered 156, as against 192 for the preceding year and 183 for 1910. This gives a death-rate of 95 per 100,000 of the population, which is much the lowest on record for the City.

The deaths from other forms of tuberculous disease numbered 71, as against 79 in the preceding year and 82 in 1910. This is equal to a death-rate of 43, which is also the lowest rate on record for these diseases.

It is a somewhat noteworthy feature in the remarkable and general decline during the last 40 to 50 years, that the decline does not occur evenly from year to year, but takes place more or less by sudden falls, followed by smaller declines, or perhaps no decline, during the succeeding two or three years. Thus, in 1907, the

## ABERDEEN—TUBERCULOSIS, 1856-1912.—QUINQUENNIAL PERIODS.

ALL AGES. BOTH SEXES.



| Years | 1856-60 | 61-65 | 66-70 | 71-75 | 76-80 | 81-85 | 86-90 | 91-95 | 96-1900 | 01-05 | 06-10 | 1911 | 1912 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (*a*) PULMONARY TUBERCULOSIS. | 322 | 274 | 298 | 243 | 223 | 204 | 184 | 181 | 167 | 138 | 116 | 116 | **95** |
| (*b*) OTHER TUBERCULOSIS. | 179 | 128 | 130 | 107 | 101 | 74 | 67 | 72 | 70 | 69 | 61 | 48 | **43** |

Deaths per 100,000 of Population.

*(Corrected for transferred deaths in 1904 and subsequent years.*

BRITISH
21 MAY 17
MUSEUM

death-rate in Aberdeen fell from 130 to 117, and then proceeded with little variation till 1911, when the rate was 116, after which there has come the sudden drop just referred to. This feature of irregularity in the decline of the death-rate is, however, not definitely reflected in the accompanying diagram, which gives quinquennial averages. The diagram, as well as Table XI., shows how remarkable has been the fall in Aberdeen of the death-rate from tuberculosis since the civil registration of deaths began in 1855. The death-rate from pulmonary tuberculosis in 1856-1860 was 322 per 100,000 of population, as against 95 in 1912; while the death-rate from other forms of tuberculous disease was 179, as against 43. If the death-rate from pulmonary tuberculosis had been as high in 1912 as it was in 1856-1860, 530 deaths would have been recorded in place of 156; and, in respect of other forms of tuberculous disease, there would have been 295 deaths in place of 71—or, in all, 825 from tuberculosis, as compared with 227.

In Table XI.(A) information is given as to the deaths at various age-periods from tuberculous disease in 1912, along with the average for the preceding two quinquennial periods. For comparison, corresponding information is given regarding the deaths from the ordinary infectious diseases from all causes, and regarding the proportion which the deaths from tubercle bears to the deaths from all causes. It will be seen that within the last ten years the age-period exhibiting the greatest proportional decline in deaths from pulmonary tuberculosis is the adolescent period (15-25 years), and that the next period with the greatest fall is the early-mature period (25-45 years). There has also been a considerable fall at the infant period (0-5 years). At the remaining periods, viz., the school (5-15 years), the late-mature (45-65), and the post-mature (65+), there has been little or no fall. In regard to other forms of tuberculous disease, the fall has been greatest at the infant period and the early-mature period. At each of these periods the deaths have fallen to about one-half of their number ten years ago. The proportion of deaths from all forms of tuberculous disease to deaths from all causes shows considerable diminution, thus indicating that the reduction in the mortality from tuberculosis is much greater than in the mortality from other causes. Thus, in 1902-1906, the average annual proportion of tuberculosis deaths to all deaths was 12·1 per cent., while in 1912 it had fallen to 8·8 per cent. The reduction is greatest at the infant period (0-5 years).

During the year, the system of voluntary notification, which applied to all forms of tuberculosis and had begun early in 1911 but did not come into full operation until about the close of the year, was continued in 1912 until 1st August, when the notification of pulmonary forms of tuberculosis was, under the Public Health (Pulmonary Tuberculosis) Regulations (Scotland), 1912, of the Local Government Board, made compulsory. This was not allowed to interfere with the continuance of the voluntary notification of other forms of tuberculosis. The fee paid under the voluntary system was 2s. 6d. for simple notification, with an additional 2s. 6d. if certain other information were supplied along with the notification. This additional information is provided by the medical man in practically every case. Thus, the usual fee for notification of tuberculosis in the

## TABLE XI.—ABERDEEN.—MORTALITY FROM TUBERCULOSIS IN YEARS 1856-1912,*

Per 100,000 of Population.

| PERIOD. | PULMONARY TUBERCULOSIS. | | | OTHER TUBERCULOUS DISEASES. | | | ALL TUBERCULOUS DISEASES. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Males. | Females. | Both Sexes. | Males. | Females. | Both Sexes. | Males. | Females. | Both Sexes. |
| 1856-60 . | 333 | 312 | **322** | 235 | 135 | **179** | 568 | 447 | **501** |
| 1861-65 . | 267 | 279 | **274** | 158 | 103 | **128** | 425 | 382 | **402** |
| 1866-70 . | 295 | 300 | **298** | 170 | 98 | **130** | 465 | 398 | **428** |
| 1871-75 . | 234 | 250 | **243** | 129 | 89 | **107** | 363 | 339 | **350** |
| 1876-80 . | 217 | 228 | **223** | 112 | 92 | **101** | 329 | 320 | **324** |
| 1881-85 . | 189 | 216 | **204** | 90 | 62 | **74** | 279 | 278 | **278** |
| 1886-90 . | 179 | 188 | **184** | 76 | 60 | **67** | 255 | 248 | **251** |
| 1891-95 . | 179 | 183 | **181** | 83 | 62 | **72** | 262 | 245 | **253** |
| 1896-1900 . | 166 | 168 | **167** | 77 | 64 | **70** | 243 | 232 | **237** |
| 1901-05 . | 143 | 134 | **138** | 79 | 62 | **69** | 222 | 196 | **207** |
| 1906-10 . | 119 | 113 | **116** | 74 | 51 | **61** | 193 | 164 | **178** |
| 1906 . . | 118 | 140 | **130** | 89 | 52 | **70** | 211 | 196 | **204** |
| 1907 . . | 123 | 111 | **117** | 81 | 61 | **71** | 204 | 172 | **188** |
| 1908 . . | 131 | 97 | **113** | 80 | 47 | **61** | 211 | 144 | **174** |
| 1909 . . | 112 | 108 | **110** | 62 | 47 | **54** | 174 | 155 | **165** |
| 1910 . . | 112 | 110 | **111** | 54 | 46 | **50** | 166 | 156 | **161** |
| 1911 . . | 137 | 98 | **116** | 52 | 45 | **48** | 189 | 143 | **164** |
| 1912 . . | 104 | 87 | **95** | 49 | 38 | **43** | 153 | 125 | **138** |

* Corrected for transferred deaths in 1904 and subsequent years.

## Table XI. (a).—Deaths at various Age-Periods from Tuberculous Diseases in Year 1912, with Average for preceding Two Quinquennia.

*Compared with Deaths from All Ordinary Infectious Diseases and from All Causes.*
*(Corrected for transferred deaths in 1904 and subsequent years.)*

| | Year. | Number of Deaths. | | | | | Number of Deaths from Tuberculous Diseases in every 100 Deaths from All Causes. |
|---|---|---|---|---|---|---|---|
| | | Phthisis. | Other Tuberculous Diseases. | All Tuberculous Diseases. | All Ordinary Infectious Diseases. | All Causes. | |
| All Ages, . . . | 1912 | 156 | 71 | 227 | 209 | 2564 | 8·8 |
| | Av. 1907-1911 | 186 | 97 | 273 | 201 | 2515 | 11·3 |
| | 1902-1906 | 211 | 112 | 323 | 218 | 2662 | 12·1 |
| Infant Period, . . . | 1912 | 5 | 31 | 36 | 144 | 762 | 4·7 |
| 0—5 Years, . . | Av. 1907-1911 | 7 | 52 | 55 | 150 | 818 | 7·2 |
| | 1902-1906 | 8 | 62 | 70 | 169 | 956 | 7·3 |
| School Period, . . . | 1912 | 12 | 21 | 33 | 29 | 105 | 31·4 |
| 5—15 Years, . . | Av. 1907-1911 | 11 | 22 | 34 | 20 | 106 | 31·1 |
| | 1902-1906 | 15 | 24 | 39 | 11 | 102 | 38·2 |
| Adolescent Period, . . | 1912 | 34 | 5 | 39 | 7 | 109 | 35·8 |
| 15—25 Years, . . | Av. 1907-1911 | 45 | 10 | 51 | 4 | 115 | 47·8 |
| | 1902-1906 | 58 | 9 | 67 | 5 | 136 | 49·3 |
| Early Mature Period, . | 1912 | 64 | 6 | 70 | 13 | 289 | 24·2 |
| 25—45 Years, . . | Av. 1907-1911 | 79 | 8 | 87 | 6 | 292 | 29·8 |
| | 1902-1906 | 91 | 11 | 102 | 7 | 313 | 32·6 |
| Late Mature Period, . . | 1912 | 34 | 5 | 39 | 7 | 519 | 7·5 |
| 45—65 Years, . . | Av. 1907-1911 | 38 | 4 | 39 | 7 | 481 | 8·7 |
| | 1902-1906 | 34 | 3 | 37 | 13 | 481 | 7·7 |
| Post-Mature Period, . . | 1912 | 7 | 3 | 10 | 9 | 780 | 1·3 |
| 65 ÷ Years, . . | Av. 1907-1911 | 5 | 1 | 7 | 13 | 703 | 0·9 |
| | 1902 1906 | 6 | 2 | 8 | 13 | 674 | 1·2 |

City is 5s. The additional information has been found to be sufficient to meet all the requirements of the Local Committee under the National Insurance Act in its administration of Sanatorium Benefit.

The number of notifications of all forms of tuberculosis during 1912 is given in Table VIII., from which it will be seen that 495 cases of pulmonary tuberculosis were notified, and 173 cases of other forms of tuberculosis. These figures exclude notifications of cases belonging to districts outside the City but receiving treatment in institutions within the City. The number of deaths from tuberculosis stated in the same table, in common with deaths from other infectious diseases given in the table, are not corrected for transfers.

It is interesting to observe that the number of cases notified under the voluntary system was practically as high as under the compulsory system. Thus, in the first seven months of the year, during which the former system was in operation, the average monthly number of notified cases was 42, while during the five succeeding months, under the compulsory system, the average was 41.

The proportion of notified cases of pulmonary tuberculosis to deaths, as corrected for transfers, during the year was as 3·2 : 1.

The number of notified cases of other forms of tuberculosis for the year was 173; and as there were 71 deaths from this disease, after allowance for transfers, the proportion of notifications to deaths was as 2·4 : 1. Both proportions are high, as such proportions occur elsewhere, but nevertheless considerably understate the actual prevalence of cases.

The arrangements for dealing with tuberculosis during 1912 were continued on practically the same lines as had been arranged in 1911. The control of the arrangements remained in the hands of the Medical Officer of Health, but much valuable assistance was received from Dr. George S. Banks, the Resident Physician at the City Hospital, who had charge of the treatment of the cases in the tuberculosis pavilion and shelters there, to which full reference was made in the report for 1911. All notified cases, except the few in which the medical attendant intimated that he did not desire visits to be made, were visited by the staff of the Public Health Department. Full information was obtained regarding the housing and family and social conditions of each patient, and arrangements made for the admission of suitable cases to sanatorium or hospital treatment or for their proper isolation and care at home.

Practically every notified case of tuberculosis among the working classes undergoing treatment at home was regularly visited—usually once a fortnight—by the special Health Visitor who had been appointed for this purpose in the previous year. Her duty has been to see that the arrangements made for the prevention and spread of infection and the preservation of hygienic surroundings of the patient were being attended to. Each house was also examined by one of the District Sanitary Inspectors, and a full report made of its sanitary condition, with a view to taking such steps for the remedying of defects as the law permitted.

Beds and bedding were continued to be given on loan to patients who were unable to provide separate beds for themselves, and who did not desire admission to hospital, or who had to wait for some time for admission. During the year, 117 beds with the necessary bedding were thus lent. A pocket sputum flask was supplied in every case requiring it, along with a quantity of disinfectant, which was renewed as often as was required. A copy of instructions for the use of consumptives was left in each household. The disinfection of each house was carried out after the removal of the patient to the City Hospital or other institution for treatment, as was also the disinfection of the house and bedding after the death of any case. Inquiries were in every case made as to the presence of suspected tuberculosis in other members of the family. A question regarding this appears in the notification form supplied to the medical attendant. Suspicious cases were, with the concurrence of the medical attendant, examined by Dr. Banks.

The National Insurance Act, which came into operation on 15th July, 1912, and had in its Sanatorium Benefit Section made large provision for the treatment of tuberculosis, required much consideration from the Local Authority as well as from the Committee appointed under the Act, and conferences were held between the Public Health Committee of the Local Authority and the Sanatorium Sub-Committee of the Burgh Insurance Committee. As a result, the Town Council undertook to receive insured tuberculous cases for treatment in the City Hospital at the rate of 25s. per week, and also to undertake all the administrative inquiries necessary in connection with the working of Sanatorium Benefit.

## BACTERIOLOGICAL EXAMINATIONS.

Table XII. gives a summary for 1912, and for each of the preceding ten years, of the bacteriological examinations made for the City in the Bacteriological Department of the University by the Professor of Pathology and his special assistant, under the agreement with the Town Council. The assistant for the year was Dr. Sinclair Hunter, who was succeeded, shortly before the close of the year, by Dr. James Muterer. The Department is greatly indebted to Professor Dean and his assistant for the constant courtesy which they show in their relations with the Department, and for their readiness to give assistance and advice. The number of examinations has continued to increase rapidly, the number for the year (3,457) being almost twice as high as in the preceding year, when 1,830 examinations were made of material from cases of human disease. The increase was in large part due to the greater prevalence of diphtheria, but also to the epidemic of typhoid fever towards the close of the year, and to an increasing resort to sputum examinations in tuberculosis. The examinations for typhoid fever included, in practically every case dealt with in the City Hospital, several examinations of the blood, stools, and urine for the typhoid germ, as well as Widal agglutinative tests.

In addition to the examinations connected with human disease, several bacteriological examinations were made of samples of food and animal products.

A considerable number of samples of milk were examined for the presence of the tubercle bacillus by means of animal inoculations. The results of these examinations are given later under the head of "Dairies."

## Table XII.—Aberdeen.—Bacteriological Examinations.

| Year. | Cases of Suspected Disease. | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Typhoid Fever. | | | Diphtheria. | | | Tuberculosis. | | | Epidemic Cerebro-Spinal Meningitis. | | | Other Diseases. | Total. |
| | Positive. | Negative. | Total. | Positive. | Negative. | Total. | Positive. | Negative. | Total. | Positive. | Negative. | Total. | | |
| 1912 . . | 225 | 747 | 972 | 800 | 1125 | 1925 | 142 | 477 | 619 | 5 | 23 | 28 | 3 | 3547 |
| 1911 . . | 57 | 161 | 218 | 409 | 753 | 1162 | 98 | 318 | 416 | 2 | 29 | 31 | 3 | 1830 |
| 1910 . . | 36 | 114 | 150 | 320 | 671 | 991 | 69 | 224 | 293 | 5 | 30 | 35 | 6 | 1475 |
| 1909 . . | 27 | 83 | 110 | 189 | 469 | 658 | 87 | 180 | 267 | 22 | 51 | 73 | 8 | 1116 |
| 1908 . . | 25 | 121 | 146 | 213 | 202 | 415 | 73 | 161 | 234 | 6 | 15 | 21 | 4 | 820 |
| 1907 . . | 31 | 139 | 170 | 163 | 214 | 377 | 60 | 186 | 246 | 5 | 23 | 28 | 3 | 824 |
| 1906 . . | 19 | 92 | 111 | 176 | 222 | 398 | 84 | 178 | 262 | ... | ... | ... | 5 | 776 |
| 1905 . . | 8 | 76 | 84 | 104 | 124 | 228 | 83 | 182 | 265 | ... | ... | ... | 308* | 885 |
| 1904 . . | 17 | 95 | 112 | 160 | 162 | 322 | 83 | 154 | 237 | ... | ... | ... | 7 | 678 |
| 1903 . . | 25 | 105 | 130 | 180 | 150 | 330 | 60 | 95 | 155 | ... | ... | ... | 4 | 619 |
| 1902 . . | 32 | 79 | 111 | 165 | 131 | 296 | 67 | 128 | 195 | ... | ... | ... | 3 | 605 |

* 307 of these examinations were of the blood of Typhus cases.

The agreement between Professor Dean and the Town Council and other contributing local authorities in the north-east of Scotland continues to work satisfactorily.

The sum contributed yearly by the various authorities sharing in the agreement amounts, approximately, to 15s. 3d. per 1,000 of population, and provides a total sum of nearly £300 for the year. This covers the whole of the expenses of the bacteriological examinations, except the charge for animals and their keep in connection with inoculations. This charge is, under the agreement, paid by each contributing authority requiring such experiments, and is in addition to the ordinary contribution.

## COMPARISON WITH OTHER TOWNS.

*(Tables XIII. and XIV.)*

Two tables (XIII. and XIV.) are submitted, in which the usual comparison is made between Aberdeen and other large towns in Scotland in regard to some of the more important features of their vital statistics.

The rates have in every instance been corrected for transferred deaths, that is, for deaths transferred from the records in the places of their occurrence to the records of those places in which the persons have their home residence.

A further correction is applied to the death-rate from All Causes. This correction is necessary to a strict comparison between the towns, owing to the differences in sex and age distribution, as explained in certain preceding annual reports. This correction has been made with the assistance of the factors for correction, prepared by the Registrar-General from the census of 1911.

*Births.*—Table XIII. shows that, among the seven principal towns, Aberdeen had the third lowest birth-rate (255 per 10,000 of the population), and stood next to Edinburgh, with 208, and Dundee, with 252. The town with the highest birth-rate was, as in the preceding year, Greenock, with 314. In all towns, except Edinburgh and Dundee, the birth-rate was higher in 1912 than in the preceding year.

*Marriages.*—In respect of the marriage-rate, Aberdeen occupied the fourth highest place, with a rate of 82 per 10,000 of population, being the same rate as in the preceding year. The towns with a higher marriage-rate were Glasgow, Edinburgh, and Paisley, with 98, 88, and 84, respectively. As has been pointed out in previous reports, the marriage-rate for the larger towns is inflated beyond its proper dimensions by the celebration of a considerable number of marriages of parties both of whom reside outside the town.

*Deaths.*—As regards the *death-rate from all causes* and at all ages, Paisley, with 143 per 10,000, had the lowest crude death-rate, followed by Aberdeen, with 156. The highest rates were in Greenock, Dundee, and Glasgow, with 187, 186, and 176, respectively. When the death-rate is corrected for age and sex distribution, Aberdeen assumes the first position, along with Paisley. This is accounted for by the correction only slightly increasing the rate in Aberdeen, while materially raising the rate in the case of Paisley. The corrected rate for Aberdeen and Paisley was 158, followed by Edinburgh, with 162.

In the preceding year (1911), Aberdeen had the second lowest crude death-rate, as also the second lowest *corrected death-rate*, Edinburgh being in each case slightly lower. In 1910, Aberdeen had the lowest crude death-rate and the lowest corrected death-rate; while in 1909, it had the fourth lowest crude death-rate, but the lowest corrected death-rate. In each of the two preceding years, 1907 and 1908, it had also the lowest corrected death-rate.

In regard to *infantile mortality* (the deaths of infants under one year per 1,000 births), Aberdeen occupied, as in 1911, an unsatisfactory position in comparison with the other six principal Scottish towns, its mortality being the second highest, with 127, Dundee alone being higher, with 158. This high mortality was due in part to the high prevalence of zymotic diseases during the year. The town with the lowest infant mortality was Paisley, with 92, Edinburgh and Leith coming next, with 110. In the preceding year, Aberdeen had the second highest infantile death-rate, Dundee, as in 1912, being highest.

In respect of the mortality from the seven chief *zymotic diseases*, Aberdeen occupied the fourth highest place, with a mortality of 12·7 per 10,000 of population. Greenock, Dundee, and Glasgow stood higher, with rates ranging from 22·9 to 13·3. Edinburgh was lowest, with 7·9.

In respect of the death-rate from *pulmonary tuberculosis*, Aberdeen regained, in 1912, with a mortality of 9·5 per 10,000, its leading position among the compared towns—a position it lost in 1911 for the first time for several years. Leith, Paisley,

## TABLE XIII.—BIRTH, DEATH, AND MARRIAGE-RATES DURING THE YEAR 1912.*

Seven Principal Towns in Scotland.

(Population estimated from Census.)

| | Glasgow. | Edinburgh. | Dundee. | **Aberdeen.** | Paisley. | Leith. | Greenock. |
|---|---|---|---|---|---|---|---|
| ESTIMATED POPULATION (*in thousands*). | 786 | 321 | 165 | **165** | 85 | 81 | 76 |
| MARRIAGE-RATE (*per* 10,000 *of population*). | 98 | 88 | 75 | **82** | 84 | 68 | 78 |
| BIRTH-RATE (*per* 10,000 *of population*). | 278 | 208 | 252 | **255** | 267 | 260 | 314 |
| DEATH-RATE— | | | | | | | |
| A—All ages (*per* 10,000 *of population*). | | | | | | | |
| (*a*) All causes, | 176 | 157 | 186 | **156** | 143 | 160 | 187 |
| *Corrected for Age and Sex Distribution* | 192 | 162 | 191 | **158** | 158 | 167 | 190 |
| (*b*) Seven chief Zymotics, | 13·3 | 7·9 | 15·0 | **12·7** | 10·6 | 12·1 | 22·9 |
| (*c*) Tuberculosis, | ... | ... | ... | **...** | ... | ... | ... |
| (1) Pulmonary, | 13·4 | 12·6 | 17·1 | **9·5** | 10·5 | 10·2 | 13·8 |
| (2) Other, | 6·5 | 5·6 | 9·5 | **4·3** | 6·2 | 6·0 | 9·8 |
| (*d*) Pneumonia, | 17·5 | 10·3 | 17·8 | **12·9** | 9·8 | 14·7 | 17·5 |
| (*e*) Malignant Diseases (chiefly Cancer), | 9·3 | 12·1 | 11·8 | **10·9** | 8·6 | 14·0 | 10·9 |
| Diseases of :— | | | | | | | |
| (*f*) Respiratory System (excluding Tubercle and Pneumonia), | 14·7 | 12·6 | 15·6 | **11·4** | 14·6 | 13·0 | 13·2 |
| (*g*) Circulatory System, | 18·9 | 20·4 | 20·4 | **20·6** | 15·3 | 17·4 | 24·8 |
| (*h*) Nervous System, | 15·8 | 18·5 | 19·4 | **18·7** | 19·0 | 21·1 | 22·1 |
| B—Infants under 1 year (*per* 1000 *births*). | 122 | 110 | 158 | **127** | 92 | 110 | 117 |
| EXCESS of BIRTH-RATE over DEATH-RATE | 102 | 51 | 66 | **99** | 124 | 100 | 127 |

* Corrected for transferred deaths.

and Edinburgh came next, with 10·2, 10·5, and 12·6, respectively. Dundee, with 17·1, had the highest death-rate.

As regards the death-rate from forms of tuberculosis other than pulmonary tuberculosis, Aberdeen had again the lowest mortality, with a death-rate of 4·3, Edinburgh coming next, with 5·6. Greenock and Dundee stood highest, with 9·8 and 9·5, respectively.

Taking all forms of tuberculosis together, Aberdeen had the lowest rate, with 13·8, followed by Leith, with 16·2, and Paisley, with 16·7. The highest was in Dundee, with 26·6. The rate in Edinburgh was 18·2; in Glasgow, 19·9; and in Greenock, 23·6.

The death-rate from *malignant diseases* (chiefly cancer) was, as in the preceding year, lowest in Paisley, with 8·6, and highest in Leith, with 14·0. In Aberdeen, it was 10·9. It may be of interest to continue the comparison made in the preceding year between the towns on the East Coast and the towns on the West Coast, including, in the latter, Govan and Partick. All the rates given are corrected by the census of 1911, and are stated per 10,000 of population.

### East Coast Towns.

| | Edinburgh. | Leith. | Dundee. | Aberdeen. | Average. |
|---|---|---|---|---|---|
| 1908 | 11·6 | 12·5 | 10·5 | 10·9 | **11·4** |
| 1909 | 11·7 | 13·7 | 10·9 | 11·1 | **11·9** |
| 1910 | 12·1 | 12·1 | 9·7 | 9·8 | **10·9** |
| 1911 | 12·6 | 11·4 | 10·5 | 10·7 | **11·3** |
| 1912 | 12·1 | 14·0 | 11·8 | 10·9 | **12·2** |
| Yearly Average | **12·0** | **12·7** | **10·7** | **10·7** | **11·5** |

### West Coast Towns.

| | Glasgow. | Govan. | Partick. | Paisley. | Greenock. | Average. |
|---|---|---|---|---|---|---|
| 1908 | 8·5 | 6·4 | 8·0 | 6·7 | 7·7 | **7·5** |
| 1909 | 8·9 | 6·5 | 7·5 | 9·1 | 7·9 | **8·0** |
| 1910 | 9·3 | 7·4 | 10·1 | 7·6 | 10·3 | **8·9** |
| 1911 | 9·3 | 8·1 | 7·7 | 8·5 | 10·2 | **8·8** |
| 1912 | 9·3 | 6·5 | 7·7 | 8·6 | 10·9 | **9·2** |
| Yearly Average | **9·0** | **7·0** | **8·2** | **8·1** | **9·4** | **8·5** |

It will be observed that, in 1912, the mortality from malignant diseases was once more considerably higher in the East Coast (11·5) than in the West Coast towns (8·5).

As regards *pneumonia*, Paisley had the lowest mortality, with 9·8 per 10,000 of the population, followed by Edinburgh and Aberdeen, with 10·3 and 12·9, respectively. The highest was Dundee, with 17·8. In each of the preceding two years, Aberdeen had the lowest mortality from this disease.

As regards the death-rate from *lung diseases* (excluding tuberculosis and pneumonia), Aberdeen had the lowest place, with 11·4, Edinburgh coming next, with 12·6. Dundee occupied the highest place, with 15·6. It is interesting to record again that, in regard to lung diseases, which are popularly supposed to be more frequently associated with the colder winds said to be more prevalent on the East than on the West Coast, the towns which usually have the lowest death-rate from these diseases are Edinburgh and Aberdeen.

The death-rate from *diseases of the circulatory system* in Aberdeen (20·6) was second highest, the rate (24·8) for Greenock being highest. Paisley was lowest, with 15·3.

As to the death-rate from *diseases of the nervous system*, Aberdeen, with 18·7, was third lowest, Glasgow, with 15·8, and Edinburgh, with 18·5, being lower.

The highest was Greenock, with 22·1. In each of the preceding two years, Aberdeen had the lowest rate.

*Excess of Birth-Rate over Death-Rate.*—The excess was, as in the preceding year, highest in Greenock, with 127 per 10,000 of population. Paisley followed closely, with 124. At a considerably lower level came Glasgow, Leith, and Aberdeen, with 102, 100, and 99, respectively. The excess for Dundee and Edinburgh was much under that for the other towns, being only 66 and 51, respectively. In the preceding year, as in 1912, the West Coast towns stood higher than the East Coast towns, but, of the latter, Leith and Aberdeen, which were practically alike, stood well above Edinburgh and Dundee.

*Zymotic Prevalence.*—In Table XIV. a comparison is made between the four chief towns in respect of (*a*) the number of notified cases of the three principal zymotic diseases, namely, diphtheria, scarlet fever, and typhoid fever; (*b*) the percentage of deaths among such cases; (*c*) the percentage of the cases removed to hospital for treatment; and (*d*) the number of deaths from these diseases per 10,000 of population.

In regard to *diphtheria*, Aberdeen showed considerably the highest prevalence as judged by the number of notified cases, the rate being 48 per 10,000 of the population, as compared with 25 for Dundee, 22 for Glasgow, and 13 for Edinburgh; but the very low case-mortality in Aberdeen (4·4 per cent.), as against 6·8 in Edinburgh and especially 10·5 in Glasgow and Dundee, suggests the possibility of the apparently higher incidence in Aberdeen being in some measure due to a more complete notification arising from a more free recourse in Aberdeen to bacteriological aid in the diagnosis of mild cases; but this is doubtful. So far as concerns deaths, the death-rate per 10,000 of population from diphtheria in both Dundee (2·6) and Glasgow (2·3) was higher than in Aberdeen (2·2), although the rate (0·9) in Edinburgh was distinctly the lowest of all. The percentage of cases treated in hospital was highest in Edinburgh, with 93. Aberdeen closely approximated, with 92, and Glasgow came next, with 90. In Dundee the percentage was 61.

*Scarlet Fever* was in 1912, as in 1911, much more prevalent in Aberdeen than in any of the other three cities. There were 67 notified cases per 10,000 of the population, as against 50 in Dundee, 37 in Glasgow, and 28 in Edinburgh. But, differing from what has just been remarked in regard to diphtheria, the case-mortality was also highest in Aberdeen, with 3·1 per cent. of notified cases, as compared with 2·5 for Glasgow, 1·8 for Dundee, and 1·1 for Edinburgh. During the preceding four years, the average case-mortality in Aberdeen had been the lowest of all, with 1·3 per cent., Edinburgh coming next, with 2·5, and Glasgow being highest, with 3·3. There can be no doubt that scarlet fever in Aberdeen during 1912 was of a distinctly severer type than has been usual for several years in the City. It is well known that the type of this disease varies much in severity from time to time. Reference to Table IX. will show that the average case-mortality in the ten years 1892-1901 was 3·5 per cent., while in the succeeding ten

TABLE XIV.—DIPHTHERIA, SCARLET FEVER, AND TYPHOID FEVER IN 1912, AND IN PRECEDING FOUR YEARS.

FOUR PRINCIPAL TOWNS IN SCOTLAND.

*(Corrected for transferred deaths.)*

| CITY. | | Estimated Popula-tion in Thousands | TOTAL NUMBER OF NOTIFIED CASES. | | | NUMBER OF NOTIFIED CASES PER 10,000 OF POPULATION. | | | NUMBER OF DEATHS PER 100 NOTIFIED CASES. | | | PERCENTAGE OF CASES TREATED IN HOSPITAL. | | | NUMBER OF DEATHS PER 10,000 OF POPULATION. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Diph-theria. | Scarlet Fever. | Typhoid Fever. | Diph-theria. | Scarlet Fever. | Typhoid Fever. | Diph-theria. | Scarlet Fever. | Typhoid Fever. | Diph-theria. | Scarlet Fever. | Typhoid Fever. | Diph-theria. | Scarlet Fever. | Typhoid Fever. |
| **Aberdeen,** | 1912 | 165 | 791 | 1,102 | 120 | 48 | 67 | 7·3 | 4·4 | 2·9 | 12·5 | 92 | 80 | 88 | 2·2 | 1·9 | 0·9 |
| | Average *1908-11* | ... | *307* | *1,056* | *27* | *18* | *61* | *1·6* | *9·2* | *1·3* | *8·0* | *88* | *84* | *89* | *1·6* | *0·8* | *0·1* |
| Glasgow, . | 1912 | 785 | 1,735 | 2,893 | 244 | 22 | 37 | 3·1 | 10·5 | 2·5 | 16·4 | 90 | 92 | 89 | 2·3 | 1·2 | 0·5 |
| | Average *1908-11* | ... | *1,739* | *3,641* | *471* | *21* | *45* | *5·7* | *10·8* | *3·3* | *15·2* | *88* | *92* | *93* | *2·2* | *1·5* | *0·9* |
| Edinburgh, | 1912 | 321 | 426 | 893 | 29 | 13 | 28 | 0·9 | 6·8 | 1·1 | 13·7 | 93 | 95 | 93 | 0·9 | 0·3 | 0·1 |
| | Average *1908-11* | ... | *482* | *1,526* | *45* | *15* | *45* | *1·3* | *8·4* | *2·5* | *10·5* | *90* | *94* | *91* | *1·3* | *1·1* | *0·2* |
| Dundee, . | 1912 | 165 | 409 | 833 | 26 | 25 | 50 | 1·6 | 10·5 | 1·8 | 7·7 | 61 | 55 | 84 | 2·6 | 0·9 | 0·1 |
| | Average *1908-11* | ... | *342* | *841* | *43* | *21* | *51* | *2·6* | *13·9* | *2·8* | *9·6* | *44* | *50* | *69* | *2·7* | *1·5* | *0·2* |

years it has been only 2·0. The percentage of cases removed to hospital for treatment was 80. This is considerably under the percentages for Edinburgh (95) and Glasgow (92), but the removals in Aberdeen were limited by the hospital accommodation available. In Dundee, the percentage (55) was much under that of Aberdeen.

*Typhoid Fever,* as has already been fully described, burst into an epidemic in the last months of the year. It is, therefore, not unexpected to find that Aberdeen had a greater prevalence of this disease (7·3 per 10,000 of population) than any of the other cities, the highest of which was Glasgow, with 3·1. The case-mortality was somewhat high at 12·5 per cent., but not higher than in Glasgow, with 16·4, and Edinburgh, with 13·7. In Dundee, it was only 7·7. The percentage of cases removed to hospital was 88 per cent. In Edinburgh, it was 93 per cent.; in Glasgow, it was 89; and in Dundee, 84.

## WORKSHOPS.

*(Table XV.)*

The number of workshops, exclusive of factories, registered at the end of the year was 917. Each succeeding year shows a diminution. In 1911, the number was 948; in 1910, 970; in 1909, 985; in 1908, 1,029; and in 1907, 1,071. There was, therefore, a reduction of 31 in the number of workshops, as compared with that for the preceding year, and of 154 since the year 1907. The reduction within the past five years has been distributed over various trades—thus, joiners' workshops have declined from 36 to 24; painters' workshops, from 47 to 36; plumbing workshops, from 32 to 28; jewellers' workshops, from 38 to 29; and dressmaking and tailoring workshops, from 288 to 240. On the other hand, fishcuring workshops have increased from 129 to 137.

The reduction has in several cases been due to workshops having been converted into factories by the introduction of motive power, owing especially to the convenience and cheapness with which electrically-driven machinery can be installed and operated, even in very small workshops. The proportion of factories in recent years has thus grown considerably at the expense of the workshops. In some instances, the factories are of very small size and have only one or two persons employed in them. I drew attention in the report for the preceding year to the apparent want of justification in the present day, at least from the sanitary standpoint, of continuing the distinction hitherto drawn, in factory legislation, between factories and workshops. The time, it appears to me, is now approaching when the sanitary control of both factories and workshops should be primarily vested in the local Public Health Authority, especially in the larger towns. The difficulty is to know how properly to fuse local control by the Pubic Health Authority with central control by the Home Office. One would not willingly throw away the undoubted advantage to the sanitary construction of factories which has resulted from the highly trained and specialised services of Factory Inspectors under the direction of the Home Office. At the same time there can be no doubt that, at least in the larger

## TABLE XV.—FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES, AND HOMEWORK.

### 1.—INSPECTION.

*Including Inspections made by Sanitary Inspectors.*

| Premises. | No. of Inspections. | No. of Written Notices | No. of Prosecutions. |
|---|---|---|---|
| Factories (including Factory Laundries) . . . . | 742 | 138 | — |
| Workshops (including Workshop Laundries) . . | 1,395 | 132 | — |
| Workplaces (other than Outworkers' premises included in Part 3 of this Report) . . . . | 125 | 24 | — |
| | 2,262 | 294 | — |

### 2.—DEFECTS FOUND.

| Particulars. | Number of Defects. Found. | Remedied. | Referred to H.M. Inspector. | Number of Prosecutions |
|---|---|---|---|---|
| *Nuisances under the Public Health Acts:—** | | | | |
| Want of cleanliness . . . . . . . | 208 | 185 | — | — |
| Want of ventilation . . . . . . . | 2 | 1 | — | — |
| Overcrowding . . . . . . . . | 4 | 4 | — | — |
| Want of drainage of floors . . . . . | 11 | 10 | — | — |
| Other nuisances . . . . . . . . | 42 | 34 | — | — |
| Sanitary accommodation — insufficient . . . | 10 | 5 | — | — |
| Sanitary accommodation — unsuitable or defective | 38 | 33 | — | — |
| Sanitary accommodation — not separate for sexes . | 2 | 2 | — | — |
| *Offences under the Factory and Workshop Act:—* | | | | |
| Illegal occupation of underground bakehouse (s. 101) | — | — | — | — |
| Breach of special sanitary requirements for bakehouses (ss. 97 to 100) . . . . . . . | 99 | 107 | — | — |
| Other offences (excluding offences relating to outwork which are included in Part 3 of this Report) . . . . . . . . | 34 | 36 | | — |
| | 450 | 417 | — | — |

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* Including those specified in sections 2, 3, 7, and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

## 3.—Home Work.

| NATURE OF WORK.* | OUTWORKERS' LISTS, SECTION 107. | | | | | | | | | Outwork in Unwholesome Premises, Section 108. | | | Outwork in Infected Premises, Sections 109, 110. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lists received from Employers. | | | | | | Notices served on Occupiers as to keeping or sending lists. | Prosecutions. | | Instances. | Notices served. | Prosecutions. | Instances. | Orders made (Section 110). | Prosecutions (Sections 109, 110). |
| | Sending twice in the year. | | | Sending once in the year. | | | | Failing to keep or permit inspection of lists. | Failing to send lists. | | | | | | |
| | Lists. † | Outworkers. † | | Lists. | Outworkers. | | | | | | | | | | |
| | | Contractors | Workmen. | | Contractors | Workmen. | | | | | | | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| Wearing apparel— | | | | | | | | | | | | | | | |
| (1) making, &c., | 14 | 2 | 228 | 1 | — | 7 | — | — | — | — | — | — | — | — | — |
| (2) cleaning and washing, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Household linen, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Lace, lace curtains, and nets, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Curtains & furniture hangings | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Furniture and upholstery, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Electro-plate, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| File making, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Brass and brass articles, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Fur pulling, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Cables and chains, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Anchors and grapnels, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Cart gear, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Locks, latches, and keys, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Umbrellas, &c., | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Artificial flowers, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Nets, other than wire nets, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Tents, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sacks, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Racquet and tennis balls, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Paper bags and boxes, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Brush making, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Pea picking, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Feather sorting, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Carding, &c., of buttons, &c., | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Stuffed toys, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Basket making, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Chocolates and sweetmeats, | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| TOTAL, | 14 | 2 | 228 | 1 | — | 7 | — | — | — | — | — | — | — | — | — |

---

* If an occupier gives out work of more than one of the classes specified in column 1, and subdivides his list in such a way as to show the number of workers in each class of work, the list should be included among those in column 2 (or 5 as the case may be) against the principal class *only*, but the outworkers should be assigned in columns 3 and 4 (or 6 and 7) into their respective classes. A footnote should be added to show that this has been done.

† The figures required in columns 2, 3, and 4 are the *total* number of the lists received from those employers who comply strictly with the statutory duty of sending *two* lists each year and of the entries of names of outworkers in those lists. The entries in column 2 must necessarily be *even* numbers, as there will be two lists for each employer—in some previous returns odd numbers have been inserted. The figures in columns 3 and 4 will usually be (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name will often be repeated

### 4.—Registered Workshops.

*Workshops on the Register (s. 131) at the end of the year :—*

| | Number. | Average—1907-1911. |
|---|---|---|
| Bakehouses | 19 | 21 |
| Blacksmiths | 25 | 27 |
| Bootmakers | 76 | 87 |
| Fish Curers<br>Fish Packers | 137 | 135 |
| Furniture, Makers of | 39 | 55 |
| Joiners | 24 | 32 |
| Painters | 36 | 42 |
| Plumbers | 28 | 29 |
| Stonecutters | 24 | 27 |
| Watchmakers and Jewellers | 29 | 36 |
| Wearing Apparel, Makers of | 240 | 262 |
| Other Workshops | 240 | 248 |
| | 917 | 1,001 |

### 5.—Other Matters.

*Matters notified to H.M. Inspector of Factories :—*

| Class. | | Number. |
|---|---|---|
| Failure to affix Abstract of the Factory and Workshop Act (s. 133) | | — |
| Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5). | Notified by H.M. Inspector | — |
| | Reports (of action taken) sent to H.M. Inspector | — |
| Other | | 5 |

*Underground Bakehouses (s. 101) :—*

| | |
|---|---|
| Certificates granted during the year | — |
| In use at the end of the year | 8 |

towns, the greater part of the ordinary sanitary control and inspection could be more conveniently and exhaustively undertaken by the officers of the local Health Authority. I am glad to say that in Aberdeen the officers of the Central and Local Authorities have always worked in great harmony, and endeavoured to afford each other the utmost mutual assistance, without regard to the precise delimitation of their respective powers.

The accompanying tabular summary of the work done during the year by the Sanitary staff in the inspection and regulation of factories and workshops has been prepared in accordance with the requirements of the Home Secretary, and was duly submitted to the Home Office. It ought to be noted that in the list of workshops the numbers relate solely to workshops, as legally defined in the Factory and Workshops Acts, and do not include factories.

Excellent work continues to be done by the Sanitary Inspector and his staff in the sanitary control of the workshops in the City. Every workshop is regularly inspected, and an effort is made to keep it in accordance with the requirements of the Public Health Act and the Factory and Workshops Acts. It will be seen from the summary of the inspections (Table XV.) that the bulk of the defects found had reference to want of cleanliness. A considerable number of notices had also to be issued with regard to the structure or condition of water-closet accommodation, but this is, on the whole, in a satisfactory condition in the City of Aberdeen. There are practically no workshops that do not comply fully with the requirements of the Sanitary Accommodation Order of the Home Office.

BAKEHOUSES.—The bakehouses, of which there were 46, including 9 certified underground bakehouses and baking-rooms, were, as usual, inspected every quarter, and were found, on the whole, to be in a satisfactory condition. There continues to be some difficulty in securing the high standard of cleanliness that ought to be characteristic of bakehouses. The nature of the materials used favours the production of much dust, which quickly coats all the furnishings, and if not thoroughly swept from the floor becomes, when wet, caked and difficult to remove. Not a few bakers have still to understand that the proper daily cleansing of their bakehouses entails a definite amount of extra work, but that it must be undertaken in the interests of pure food.

Two additional bakehouses were opened during the year, but both of them were small. One of the previously existing bakehouses was closed.

DAIRIES.—The dairies have been regularly inspected throughout the year, and their condition was, as a rule, found to be satisfactory. A number of small additions, alterations, and repairs were carried out at the instance of the Sanitary Department.

Owing to the resignation in the preceding year of the Veterinary Inspector, Mr. M'Lauchlan Young, and to the Town Council delaying the making of a new appointment in view of the desire to come to an arrangement with the County Authorities under which the cattle in the numerous dairies outside the City as well as in the dairies inside the City would be submitted to systematic inspection, the periodical examination of all the dairy herds inside the City was replaced to some extent during the year by visits made by certain of the Veterinary Surgeons in the City at the special request, from time to time, of the Public Health Department. The reports of these inspections showed that the cows were, on the whole, in good condition and free from serious disease. The cows in the dairies within the City are nearly all young cows, and are practically always fed off at the end of the lactation period and replaced by fresh cows.

TUBERCLE IN MILK.—During the year, 35 samples of milk were examined for tubercle bacilli by inoculation methods in the bacteriological laboratory of the University. Of the 35 samples, 8 were obtained from dairy herds within the City, 18 from milkshops receiving the whole of their supply from herds outside the City, and 6 from dairy carts similarly supplied. In only one case—a milk from a town milkshop receiving its supply from country farms—tubercle was found. The cows in this dairy were examined by a Veterinary Surgeon, and samples of milk were taken from three suspected cows and were tested for tubercle by inoculation. Tubercle was found in the milk of one of the cows. Before the results of the inoculations had been obtained, the farmer agreed to withdraw all three cows from his dairy, and to have them fed off and slaughtered.

It may be stated that since the fuller organisation for dealing with tuberculous cases in the City was introduced, a note is sent in every human case of tuberculosis of the abdomen or of cervical glands to the Medical Officer of Health of the sanitary district from which the milk supply or supplies were being obtained by the patient during the six months preceding notification. This is with a view to the Medical Officer causing an inspection to be made of the cows at the dairy. It has not always, however, been possible to have such inspection made, owing to the absence as yet in country districts of any regularly appointed Veterinary Inspector for such a purpose. Similar inspections are invariably made with regard to the milk supplies obtained from dairy herds within the City. If the inspection reveals the presence of any cow with a suspicious condition of udder, the milk is taken for an inoculation test. The chief difficulty in carrying out this system of inspection satisfactorily lies in the fact that the milk supply of the patient is very frequently obtained from a milkshop in the City which receives its supplies from a considerable number of sources, amounting in some instances to as many as thirty or forty. It is, of course, impossible in such cases, with the present provision for veterinary inspection, to attempt the examination of the various herds. In none of the dairy herds within the City examined with this object were any suspicious indurated udders found, except in two herds, but the milk from the suspected cows did not give a positive result by inoculation tests.

## INSPECTION OF PLANS.

As usual, a considerable number of plans—chiefly of factories and workshops, and especially of those in which foodstuffs are prepared—were examined and reported on by the Sanitary Inspector and myself. Thus, plans for 14 new buildings, or alterations of existing buildings, were dealt with, 8 of which related to premises in which foodstuffs were prepared, including 7 fishcuring premises. In the previous year, the number of plans examined was 17. Several recommendations in regard to improvements in lighting and ventilation, paving of floors, and the provision of sanitary conveniences were approved by the Town Council and given effect to.

## OFFENSIVE TRADES.

The offensive trades in Aberdeen, within the meaning of the Public Health Act, are concerned chiefly with tallow melting or oil extracting from ox bones or fish livers, soap boiling, slaughtering, knackering, hide factoring, and the manufacture of manures, including fish manure and a similar product known as fish meal.

Reference was made in the report for the preceding year to a fish meal or fish manure manufactory in Palmerston Road regarding which several complaints had been received. This manufactory passed in the course of 1911 into the hands of another Company, and has, subsequently, on the whole, been more satisfactorily conducted, so that there has been less reason to complain of nuisance, but complaints have not ceased. The new Company applied about the middle of 1912 for permission to erect a store adjacent to the existing premises. The new building was intended for the storage of manufactured fish meal. In view, however, of the fact that the original business had never received the sanction of the Town Council, and that, indeed, no sanction had been applied for, as the owners had contended that the manufacture of fish meal did not fall within the list of trades enumerated in Section 32 of the Public Health Act, and as the works were not free from complaint the Town Council resolved, on a report from the Sanitary Inspector and myself, to refuse sanction. The application for sanction to erect the store had become necessary through an extension, by resolution of the Town Council in 1908, of the list of offensive trades so as to include the manufacture of fish meal. It is, however, proper to state that the question was privately raised by the owners of the manufactory as to whether a store in which no manufacturing process was to be carried out could be viewed as an extension of their business within the meaning of the Public Health Act. The Public Health Committee, acting on the advice of the Town Clerk and their Health Officers, took the view that such a store was an extension of their business, and could not be erected without sanction.

An application for permission to establish the business of gut cleaning in premises to be erected in Deer Road, Woodside, was also dealt with during the year. Sanction was, on the report of the Sanitary Inspector and myself, refused by the Town Council. The proposed premises would have been within a few yards of dwelling-houses, and it was thought advisable that businesses of this kind should not be established in what was virtually a residential district, but should rather find a place in those parts of the City—as, for example, the ground adjacent to the Docks—in which some such businesses were already established. This suggestion was subsequently given effect to by the applicant.

An application was also received for the establishment of the business of tallow melting within the premises in Weigh-house Square. The tallow melting was to be carried out in conjunction with the manufacture of sausages and similar meat foods. Sanction was granted on certain conditions.

SLAUGHTER-HOUSES.—The slaughter-houses, of which there are seven in the City, including one large slaughter-house in Hutcheon Street belonging to the Flesher Incorporation, were regularly visited throughout the year, and are being kept in good condition.

Proceedings were instituted against the owner of a cow for contravening the byelaw under which persons are forbidden to remove from a slaughter-house any living animal brought to the slaughter-house for the purpose of being slaughtered, or any carcase which exhibits any disease or appearance of disease or unsoundness, without first having received the sanction of an officer of the Health Department. In this case a living animal had been removed.

Food Inspection.—The two inspectors appointed specially for the duty of meat and food inspection throughout the City continued to carry out their work with much intelligence and care. Each slaughter-house was visited at least once daily, as were also the two important meat marts in the City and the large Fish Market. Special attention is also given to the numerous provision-curing works in the City, and they were frequently inspected, as were also the butcher and other shops in which food of a kind liable to become unsound is sold. The report of the Sanitary Inspector contains detailed information as to the quantity of meat seized or destroyed during the year, and also to the places in which the seizures were made. In all cases of difficulty, the meat is examined by the Sanitary Inspector and myself, and in every case in which there is a possibility of the case being dealt with in Court. In only four cases was it found necessary to take proceedings in Court. Three of them related to carcases or parts of carcases suffering from tuberculosis. Court proceedings are not taken in any case where the carcase is met with in a slaughter-house, and where there was no apparent intention of concealing the condition of the carcase. But if the meat has been removed for sale, without any intimation to the Public Health Department, Court proceedings are invariably taken.

Out of the 238 whole carcases of cattle seized within the slaughter-houses, 189, or 79 per cent., were seized on account of tuberculosis; and of the 239 part carcases seized, 177, or 74 per cent., were dealt with for the same cause. It is somewhat interesting to observe that the corresponding percentages for the preceding year were almost exactly the same, namely, 79 and 73, respectively. The number of whole carcases seized for tubercle represented upwards of 6 per 1,000 of the total cattle slaughtered or examined within the City, and the part carcases so seized represented an almost equal proportion. Altogether, therefore, about 12 to 13 per 1,000 of the cattle slaughtered were suffering from tuberculosis to such an extent as to justify complete or partial seizure. In the preceding year, the proportions seized were 5 per 1,000 for whole carcases, and slightly above 5 for part carcases. Thus the total for that year was upwards of 10 per 1,000, which was a little under the proportion for 1910. Out of 31 calves slaughtered in the slaughter-houses, 2 were found to be tuberculous. Exceedingly few calves are slaughtered in Aberdeen, and they are usually of an inferior quality. Thus, of the total of 31 calves slaughtered during the year, no fewer than 17 were seized in whole or in part. As usual, no sheep were found to be tuberculous, although upwards of 55,000 sheep were slaughtered; and only two pigs were tuberculous, out of 2,554.

In addition to the seizures in the slaughter-houses, of which there were 569, there were 215 seizures elsewhere in the City, of which 143 were in meat marts and 20 in the Fish Market. The carcases sold in the meat marts are in considerable part brought from slaughter-houses in the country, and have not always been inspected before reaching the City. Hence the fairly large number of seizures in these marts.

As usual, the most common cause, apart from tuberculosis, for seizure of carcases—but usually only partial seizure—was bruising, of which there were 103 cases, as against 99 in the preceding year. In 143 instances, seizure was due to inflammatory conditions, usually of internal organs, or of the pleura or peritoneum. Other causes for seizure were emaciation, suffocation, dropsy, and decomposition. There were 4 cases of actinomycosis and 1 of sarcoma.

It is interesting to note, in view of the fact that there was only one inspector up to near the end of 1910, and that there have been two inspectors since that time, that the number of seizures rose considerably during 1911 and 1912, thus showing the necessity for the appointment of the second inspector, which had been urged for some time by the Sanitary Inspector and myself. For the years 1909 and 1910 there was a yearly average of about 6,000 inspections, with 612 seizures. During 1911 and 1912, the inspections approximated to an average of 10,000, with almost exactly an average of 800 seizures. The appointment of a second inspector has increased the number of inspections by two-thirds, and the seizures by nearly one-third.

*Public Health (Regulations as to Food) Act*, 1907.—Very little food, apart from cereals, is imported direct into Aberdeen, and no part of such food required to be dealt with under the Regulations.

Corporation Lodging-house.—The Corporation Lodging-house continues to be of much service to the City in providing a sanitary and properly regulated shelter for some of the poorest classes, and is managed by a superintendent who takes a keen personal interest in the condition of the inmates. It is to be regretted that the revenue from the Lodging-house still continues to be insufficient to meet the expenditure, including interest and sinking fund, and that the deficit for 1912-13 was much higher than in the preceding year, owing to diminished employment within the City for the casual labouring classes, from whom mainly are drawn the occupants of common lodging-houses. The deficit last year was no less than £1,109, as against £527 in 1911-12 and £628 in 1910-1911. I do not believe, however, that this financial loss is a loss otherwise to the Corporation. The Corporation Lodging-house provides hygienic amenities that are not to be found, as a rule, in ordinary lodging-houses, and it also enables the authorities to exercise a better supervision over the class of persons who are in the habit of residing in common lodging-houses.

## WEATHER AND DISEASE.

*(Tables XVI. and XVII.)*

As in the reports for the preceding three years, I have prepared a table summarising the state of the weather for each month throughout the year, and comparing it with the average for the ten years 1897-1906. I have also supplied a table containing the number of deaths in each month from the more important diseases, together with the average number for the preceding ten years. The

## Table XVI.—Aberdeen.—Meteorological Record for Each Month (From King's College Observatory).

### YEAR 1912.

| MONTH. | BAROMETRIC PRESSURE (at 32° F. and Sea Level). | | | TEMPERATURE OF ATMOSPHERE. | | | | Mean Daily Temp. of Ground (4 feet below surface) | Relative Humidity. Sat.=100. | RAIN-FALL (If Snow, indicate by S.) | | SUNSHINE. | | * WIND. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | Direction; and Duration in Hours. | | | | | | | | | Velocity |
| | Absolute Highest | Absolute Lowest. | Mean Daily Range. | Absolute Highest | Absolute Lowest. | Mean Daily Temp. | Mean Daily Range | | | Duration. | Amount | Duration. | Percentage of possible Sunshine. | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. | Calm | Average No. miles per day. |
| | Inches. | Inches. | Inches. | | | | | | | Hours. | Inches. | Hours. | | | | | | | | | | | |
| January, | 30·31 | 29·06 | 0·24 | 53·6 | 26·5 | 38·6 | 6·5 | 41·2 | 82 | 106 | 2·8 | 37 | 17 | 30 | 29 | 20 | **227** | 90 | **108** | **158** | 82 | ... | 296 |
| February, | 30·06 | 28·89 | 0·22 | 51·9 | 11·6 | 39·8 | 7·0 | 39·8 | 81 | 109 | 3·1 | 45 | 17 | 13 | 23 | 55 | **170** | **212** | 96 | 87 | 40 | ... | 204 |
| March, | 30·08 | 28·85 | 0·22 | 53·7 | 32·4 | 42·8 | 8·6 | 41·9 | 82 | 81 | 2·4 | 114 | 32 | 17 | 15 | 32 | **206** | **193** | **111** | **130** | 40 | ... | 219 |
| April, | 30·60 | 28·69 | 0·24 | 60·3 | 30·0 | 44·9 | 11·7 | 43·8 | 76 | 29 | 0·4 | 198 | 47 | 44 | 43 | 20 | **132** | **139** | 80 | **130** | **132** | ... | 209 |
| May, | 30·32 | 29·28 | 0·19 | 63·9 | 33·6 | 48·5 | 12·5 | 47·5 | 75 | 59 | 2·0 | 201 | 40 | 42 | 75 | 39 | **140** | **116** | 45 | **126** | **161** | .. | 195 |
| June, | 29·96 | 29·49 | 0·13 | 66·6 | 39·8 | 52·7 | 8·7 | 49·7 | 83 | 70 | 1·9 | 82 | 16 | 41 | **110** | 68 | **188** | **118** | 38 | 47 | **110** | ... | 182 |
| July, | 30·34 | 29·12 | 0·16 | 69·7 | 46·1 | 55·5 | 9·4 | 52·9 | 81 | 47 | 1·8 | 113 | 21 | 57 | 65 | **111** | **113** | **149** | 40 | 19 | **190** | ... | 172 |
| August, | 30·04 | 29·20 | 0·20 | 60·4 | 36·4 | 51·4 | 9·7 | 53·1 | 82 | 104 | 4·6 | 67 | 15 | 41 | 53 | 99 | **118** | 54 | 29 | **182** | **161** | 7 | 183 |
| September, | 30·52 | 29·36 | 0·16 | 65·1 | 36·2 | 50·5 | 9·0 | 51·2 | 79 | 63 | 1·6 | 86 | 23 | 19 | 15 | 66 | **134** | **119** | 52 | **117** | **198** | ... | 221 |
| October, | 30·46 | 29·05 | 0·29 | 62·4 | 28·6 | 46·1 | 10·9 | 48·6 | 82 | 112 | 4·4 | 77 | 25 | 34 | 19 | 49 | 95 | **231** | **127** | **111** | 78 | ... | 208 |
| November, | 30·28 | 29·12 | 0·21 | 55·3 | 19·0 | 41·4 | 8·8 | 45·1 | 80 | 99 | 3·1 | 46 | 19 | 14 | ... | ... | 6 | 96 | **205** | **292** | **107** | ... | 233 |
| December, | 30 35 | 28·80 | 0·34 | 57·1 | 8·8 | 40·4 | 9·9 | 41·6 | 80 | 42 | 1·2 | 31 | 15 | ... | ... | ... | 43 | **303** | **300** | 82 | 16 | ... | 227 |
| **Monthly Average** | 30·28 | 29·08 | 0·22 | 60·0 | 29·1 | 46·1 | 9·4 | 46·4 | 80 | 77 | 2·4 | 91 | 24 | 29 | 37 | 47 | **131** | **152** | **103** | **123** | **120** | 0·6 | 212 |
| **Total for Year,** | ... | ... | ... | ... | ... | ... | .. | ... | ... | 921 | 29·3 | 1097 | ... | **352** | **447** | **559** | **1572** | **1820** | **1231** | **1481** | **1315** | 7 | ... |
| AVERAGE FOR TEN YEARS, 1897-1906. | | | | | | | | | | | | | | | | | | | | | | | |
| January, | 30·60 | 28·80 | 0·31 | 52·1 | 25·9 | 39·0 | 7·6 | 41·1 | 81 | 74 | 2·1 | 45 | 20 | 22 | 8 | 16 | 73 | **155** | **219** | **139** | **111** | 0·1 | 246 |
| February, | 30·48 | 28·78 | 0·29 | 51·3 | 21·7 | 37·5 | 8·5 | 39·7 | 79 | 82 | 2·2 | 77 | 29 | 32 | 10 | 24 | 49 | **140** | **149** | **132** | **139** | ... | 243 |
| March, | 30·36 | 28·85 | 0·27 | 55 3 | 24·5 | 39·9 | 9·4 | 40·2 | 78 | 97 | 2·3 | 109 | 30 | 64 | 22 | 39 | 83 | **143** | **151** | **101** | **141** | ... | 227 |
| April, | 30·37 | 29·09 | 0·24 | 59 4 | 30·2 | 42·9 | 10 6 | 42·2 | 78 | 101 | 2·5 | 162 | 39 | 41 | 24 | 55 | **102** | **170** | **100** | **107** | **120** | 0·1 | 227 |
| May, | 30·43 | 29·16 | 0·19 | 64·1 | 34·1 | 46·8 | 10·6 | 45·6 | 78 | 101 | 2·7 | 177 | 36 | **120** | 57 | 74 | 93 | **136** | 67 | 63 | **132** | 1·2 | 205 |
| June, | 30·42 | 29·43 | 0·14 | 69·7 | 38·4 | 52·9 | 11·0 | 50·1 | 78 | 59 | 1·5 | 180 | 34 | 96 | 51 | 94 | **114** | **144** | 58 | 48 | **114** | 0·5 | 172 |
| July, | 30·32 | 29·40 | 0·17 | 73·6 | 43·6 | 57·0 | 11·6 | 53·4 | 77 | 77 | 2·6 | 166 | 32 | 68 | 51 | 72 | **102** | **138** | 97 | 99 | **116** | 0·9 | 164 |
| August. | 30·30 | 29·27 | 0·19 | 72·6 | 42·8 | 56·1 | 11·0 | 54·4 | 79 | 77 | 2·8 | 157 | 34 | 51 | 36 | 60 | 97 | **178** | **113** | 93 | **116** | 0·9 | 162 |
| September, | 30·43 | 29·19 | 0·20 | 68·3 | 37·8 | 53·9 | 11·2 | 53·2 | 80 | 72 | 2·1 | 133 | 35 | 40 | 20 | 38 | 90 | **176** | **127** | **117** | **114** | 0·4 | 180 |
| October, | 30·45 | 28·95 | 0·25 | 61·5 | 33·7 | 47·4 | 9·8 | 50·2 | 82 | 105 | 2·8 | 98 | 31 | 33 | 15 | 35 | 66 | **170** | **167** | **125** | **133** | ... | 209 |
| November, | 30·49 | 28·88 | 0·26 | 56·5 | 27·5 | 43·4 | 8·1 | 46·8 | 82 | 101 | 2·8 | 54 | 23 | 36 | 9 | 29 | 82 | **142** | **179** | **137** | **105** | ... | 241 |
| December, | 30·48 | 28·61 | 0·30 | 53·9 | 23·8 | 39·7 | 8·0 | 43·1 | 82 | 121 | 2·9 | 34 | 17 | 22 | 4 | 20 | 81 | **163** | **218** | **140** | 95 | 0·1 | 239 |
| **Monthly Average** | 30·43 | 29·03 | 0·23 | 61·5 | 32·0 | 46·4 | 9·8 | 46·7 | 80 | 89 | 2·4 | 116 | 30 | 52 | 26 | 46 | 86 | **155** | **137** | **108** | **120** | 0·4 | 210 |
| **Total for Year,** | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1067 | 29·3 | 1392 | ... | **625** | **307** | **556** | **1032** | **1855** | **1645** | **1301** | **1436** | 4·2 | ... |

* To indicate the dominant direction, every duration of 100 hours and upwards is in thick figures.

## TABLE XVII.—ABERDEEN.—NUMBER OF DEATHS FROM PRINCIPAL CAUSES IN EACH MONTH.

*(Corrected for transferred deaths.)*

| MONTH. | BIRTHS. | CAUSE OF DEATH. | | | | | | | | | | | | | | | | | | | AGES OF PERSONS DYING. | | | | | | | | Average Age at Death. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | TUBERCULOSIS. | | | | | | | | | | | | | | YEARS. | | | | | | | |
| | | Measles. | Whooping Cough | Scarlet Fever. | Diphtheria. | Typhoid Fever. | Influenza. | Lungs (Phthisis). | Brain (Tub. Meningitis). | Abdomen (Tab. Mesenterica / Tub. Peritonitis). | Other. | Dis. of Digest. System (incl. Diarrhoea). | Pneumonia. | Bronchitis. | Diseases of Circulatory System. | Diseases of Urinary System. | Cerebral Apoplexy and Haemiplegia. | Convulsions. | Prematurity. | Malignant Diseases. | Under 1 Year. | 0–5 | —15 | —25 | —45 | —65 | 65+ | All Ages. | |
| YEAR 1912. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| January, . . | 385 | 27 | 12 | 9 | 5 | 0 | 2 | 16 | 1 | 1 | 2 | 21 | 29 | 23 | 31 | 2 | 14 | 4 | 8 | 13 | 67 | 113 | 11 | 7 | 40 | 46 | 74 | 291 | 33·8 |
| February, . | 305 | 7 | 7 | 5 | 5 | 0 | 4 | 18 | 4 | 1 | 2 | 13 | 19 | 27 | 23 | 9 | 17 | 4 | 9 | 6 | 40 | 67 | 12 | 12 | 26 | 43 | 72 | 232 | 39·1 |
| March, . . | 377 | 2 | 4 | 6 | 3 | 0 | 1 | 12 | 1 | 4 | 1 | 12 | 20 | 9 | 25 | 10 | 13 | 5 | 4 | 13 | 35 | 58 | 7 | 12 | 25 | 37 | 70 | 209 | 41·0 |
| April, . . | 374 | 1 | 4 | 1 | 2 | 0 | 0 | 14 | 8 | 4 | 2 | 19 | 16 | 11 | 33 | 8 | 10 | 6 | 5 | 18 | 34 | 56 | 15 | 8 | 32 | 51 | 57 | 219 | 41·6 |
| May, . . | 346 | 0 | 1 | 2 | 1 | 1 | 2 | 14 | 2 | 5 | 0 | 16 | 14 | 8 | 22 | 13 | 11 | 7 | 14 | 10 | 44 | 53 | 11 | 5 | 29 | 44 | 53 | 195 | 40·9 |
| June, . . | 334 | 0 | 10 | 1 | 1 | 0 | 4 | 15 | 1 | 2 | 4 | 13 | 11 | 9 | 38 | 9 | 13 | 3 | 9 | 13 | 46 | 56 | 7 | 16 | 25 | 37 | 68 | 209 | 40·5 |
| July, . . | 340 | 0 | 8 | 2 | 4 | 1 | 1 | 13 | 2 | 1 | 2 | 11 | 10 | 4 | 26 | 9 | 16 | 3 | 12 | 18 | 37 | 54 | 12 | 11 | 12 | 47 | 48 | 184 | 39·6 |
| August, . . | 330 | 0 | 5 | 1 | 4 | 0 | 1 | 4 | 0 | 0 | 3 | 14 | 11 | 7 | 37 | 6 | 14 | 2 | 10 | 14 | 27 | 39 | 5 | 9 | 17 | 55 | 62 | 187 | 45·8 |
| September, . | 322 | 0 | 3 | 2 | 3 | 1 | 0 | 11 | 3 | 1 | 0 | 19 | 20 | 6 | 20 | 12 | 11 | 0 | 9 | 21 | 34 | 47 | 5 | 9 | 19 | 41 | 61 | 182 | 42·6 |
| October, . . | 345 | 0 | 2 | 1 | 3 | 2 | 3 | 15 | 1 | 1 | 0 | 13 | 10 | 11 | 18 | 8 | 12 | 5 | 10 | 18 | 43 | 56 | 7 | 2 | 22 | 37 | 59 | 183 | 42·4 |
| November, . | 356 | 0 | 3 | 0 | 1 | 10 | 0 | 11 | 3 | 2 | 2 | 15 | 30 | 14 | 30 | 8 | 13 | 2 | 11 | 17 | 51 | 73 | 8 | 11 | 24 | 40 | 68 | 224 | 38·6 |
| December, . | 373 | 0 | 2 | 2 | 3 | 0 | 2 | 13 | 2 | 1 | 2 | 21 | 23 | 19 | 35 | 10 | 14 | 6 | 11 | 19 | 72 | 90 | 5 | 7 | 18 | 41 | 88 | 249 | 40·2 |
| Total for year 1912. | 4187 | 37 | 61 | 32 | 35 | 15 | 20 | 156 | 28 | 23 | 20 | 187 | 213 | 148 | 338 | 104 | 158 | 47 | 112 | 180 | 530 | 762 | 105 | 109 | 289 | 519 | 780 | 2564 | 40·5 |
| AVERAGE FOR PRECEDING TEN YEARS—1902-11. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| January, . . | 389 | 10 | 7 | 1·2 | 3·2 | 0·2 | 3·7 | 16 | 3·9 | 2·4 | 3·6 | 18 | 24 | 29 | 30 | 8 | 14 | 6 | 10 | 14 | 61 | 92 | 10 | 12 | 30 | 51 | 74 | 269 | 37·0 |
| February, . | 356 | 6 | 11 | 0·9 | 2·4 | 0·3 | 7 | 19 | 3·4 | 1·7 | 2·1 | 16 | 20 | 24 | 24 | 8 | 15 | 6 | 10 | 14 | 59 | 86 | 10 | 10 | 26 | 44 | 70 | 246 | 37 2 |
| March, . . | 410 | 6 | 10 | 1·2 | 1·8 | 0·3 | 8 | 21 | 6 | 3·1 | 3·0 | 17 | 23 | 24 | 29 | 9 | 11 | 6 | 10 | 14 | 58 | 91 | 10 | 13 | 32 | 47 | 70 | 263 | 36·4 |
| April, . . | 401 | 2·9 | 10 | 0·6 | 0·9 | 0·4 | 2·8 | 18 | 5 | 3·2 | 2·4 | 14 | 19 | 17 | 27 | 8 | 10 | 7 | 10 | 10 | 55 | 78 | 9 | 12 | 25 | 40 | 60 | 224 | 36·1 |
| May, . . | 414 | 1·4 | 9 | 0·4 | 0·9 | 0·6 | 1·1 | 19 | 6 | 3·5 | 2·6 | 17 | 14 | 14 | 24 | 8 | 12 | 4·6 | 8 | 13 | 47 | 69 | 9 | 12 | 27 | 39 | 62 | 218 | 37·9 |
| June, . . | 406 | 1·2 | 6 | 0·1 | 0 9 | 0·2 | 1·6 | 20 | 3·8 | 3·2 | 2·7 | 19 | 14 | 10 | 26 | 6 | 10 | 4·5 | 7 | 12 | 41 | 58 | 8 | 11 | 29 | 36 | 49 | 191 | 37·3 |
| July, . . | 387 | 1·5 | 4·6 | 0·6 | 0·7 | 0·1 | 0·3 | 13 | 3·0 | 2·6 | 2·2 | 14 | 12 | 7 | 22 | 5 | 11 | 4·7 | 7 | 14 | 37 | 50 | 7 | 9 | 21 | 33 | 48 | 168 | 38·6 |
| August, . . | 360 | 2·0 | 3·2 | 0·5 | 1·3 | 0·4 | 0·6 | 14 | 3·8 | 1·8 | 2·9 | 19 | 8 | 7 | 22 | 8 | 11 | 4·4 | 8 | 14 | 43 | 57 | 7 | 9 | 23 | 34 | 49 | 179 | 37·5 |
| September, . | 360 | 0·7 | 3·3 | 1·5 | 1·6 | 0·2 | 0·2 | 14 | 2·7 | 2·2 | 2·9 | 24 | 12 | 7 | 19 | 6 | 8 | 3·0 | 8 | 12 | 49 | 65 | 8 | 9 | 22 | 33 | 40 | 177 | 33·8 |
| October, . . | 391 | 4·5 | 2·5 | 1·8 | 1·9 | 0·5 | 0·5 | 16 | 2·8 | 1·1 | 1·6 | 18 | 12 | 11 | 23 | 6 | 11 | 4·0 | 8 | 12 | 50 | 67 | 8 | 11 | 23 | 37 | 46 | 192 | 35·4 |
| November, . | 356 | 12 | 4·0 | 1·5 | 2·3 | 0·2 | 1·4 | 12 | 2·6 | 2·8 | 1·8 | 19 | 15 | 15 | 25 | 6 | 12 | 3·8 | 10 | 16 | 53 | 76 | 7 | 9 | 20 | 43 | 58 | 213 | 37·3 |
| December, | 380 | 14 | 7 | 2·2 | 2·2 | 0·2 | 3·1 | 17 | 2·5 | 2·8 | 2·0 | 17 | 22 | 26 | 25 | 8 | 12 | 6 | 11 | 12 | 66 | 98 | 9 | 11 | 23 | 44 | 64 | 249 | 34·7 |
| Average Total for 1902-11, | 4610 | 62 | 78 | 13 | 20 | 4 | 30 | 199 | 46 | 30 | 30 | 212 | 195 | 191 | 296 | 86 | 137 | 60 | 107 | 157 | 619 | 887 | 102 | 128 | 301 | 481 | 690 | 2589 | 36·6 |

numbers in this table have been corrected for transferred deaths. The number of persons dying at each age-period during each month is also given.

The meteorological averages for the ten years show that, in Aberdeen, January or February is the coldest month of the year and that July is the warmest. They also show that December receives the least sunshine, and June the most—five to six times more than December. June is also the driest month, while December is the wettest. The mean daily range of temperature—or the difference between the highest and the lowest for the day—is greatest from April to September, and is lowest in January. It increases rapidly between January and April. Northerly winds are distinctly more prevalent in May than in any other month, easterly winds prevail most in June, westerly winds in December and January, and southerly winds in December and January. The most windy months are January and February, and the least windy are July and August.

In 1912, the coldest month, as in the preceding two years, was January, with a temperature of 38·6 deg. F. The average temperature of January in the preceding year was 39·4. The warmest month was July, with 55·5 deg. F. In the preceding year, the warmest month was August, with 58·4. The mean temperature of the ground at four feet beneath the surface was lowest in February (39·8 deg. F.), and was very slightly above the average (39·7) for that month. The highest was in August, with 53·1 deg. F., and was under the average by 0·3 deg. In the preceding year, the highest was also in August, with 56·1 deg F.

The amount of bright sunshine for the whole year (1,097 hours) was much under the average (1,392 hours), and strikingly under the amount for the preceding year (1,518 hours). The percentage of possible sunshine was highest in April, with 47, and lowest in August and December, with 15. The three months with the highest absolute amount of bright sunshine were the three consecutive months of March, April, and May, in which very nearly one-half of the whole sunshine for the year was received. The immediately succeeding four summer months were exceedingly deficient in sunshine, and it is interesting to note what effect the unkindly weather of these four months had on the mortality from diseases that are popularly supposed to be more or less influenced by weather. Bronchitis had considerably fewer deaths than usual. On the other hand, pneumonia had considerably more deaths. Phthisis had also, like bronchitis, a much reduced mortality, while deaths from the digestive system, including diarrhœal diseases, were much less frequent. Deaths from diseases of the circulatory system were greatly above the average. This was true also of deaths from cerebral apoplexy and hemiplegia. It is curious to observe that while the deaths at the early-mature period (25-45 years) were considerably reduced during these sunless months, the deaths at the later age-periods were markedly increased.

The total rainfall for the year (29·3 inches) was exactly equal to the average. The wettest months were August and October, during which months nearly one-third of the total rainfall for the year occurred. In the preceding year, the wettest months were November and December, in which also the rainfall amounted to about one-third of the total fall for the year. The driest month was April, with only 0·4 inches of rainfall.

The atmospheric humidity for the whole year (80 per cent.) was exactly equal to the average. It was least in May (75), and highest in June (83). The atmospheric humidity had a much more evident relationship to diminished sunshine than to increased rainfall, the two months with the lowest humidity being the two months with considerably the highest sunshine, while the months with the highest humidity had one of the lowest percentages of possible sunshine.

Northerly winds were most prevalent in July, easterly winds in June, southerly winds in December, and westerly winds in November. The month with the highest average wind velocity was January, with 296 miles per day. November came next, with 233; while the month with the least wind velocity was, as in the preceding year, July, with 172. According to the monthly averages of preceding years, the most windy month is January and the least is August.

Turning to the table of deaths, we find from that part of it which gives the average for the ten years 1902-11 that the most fatal month for the population as a whole is January, with 269 deaths, and the least fatal is July, with 168 deaths. Infantile mortality reaches its maximum in January and December, with 61 and 66 deaths, respectively, and its minimum in June and July, with 41 and 37 deaths, respectively. The proportion between the extremes is much the same for the total death-rate as for the infantile death-rate. Deaths of children at the school age are most common in the first three months of the year and least common in July and August. At the adolescent age-period, the deaths are most numerous in the first and second quarters and least numerous in the third quarter. The high mortality in the second quarter is in considerable measure due to an increase of deaths from pulmonary tuberculosis, following, no doubt, upon the rigours of the winter. At the higher age-periods, the greatest number of deaths is in January and the lowest is in September.

During the year 1912, the highest mortality at all ages was in January, with 291 deaths, and the lowest was in September, with 182 deaths. In the preceding year, the highest was in December, with exactly the same maximum of 291 deaths, and the lowest was in June, with 151. The infantile mortality was highest in January and December, with 67 and 72 deaths, respectively, and lowest in August, with 27 deaths. In the preceding year, the extremes were 84 in December, and 25 in July.

As regards the mortality from zymotic diseases, it was by much the highest for measles in January, and also highest for whooping cough and scarlet fever in the same month, although there was a considerable number of deaths from whooping cough in June and July. Diphtheria caused slightly more deaths in January and February than in any other months of the year, while typhoid, on account of the epidemic already referred to, was most fatal in November. The largest mortality from phthisis was in January and February, and much the lowest was in August. Deaths from diseases of the circulatory system were most numerous in June and August, but were fairly evenly distributed throughout the year. Bronchitis was, by much, most fatal in January and February, and least in July to September; while pneumonia was most fatal in November and January, and least so in June to August. Deaths from diseases of the digestive system, including diarrhœa, were most common in January and December, and least in July and March. Cerebral apoplexy and hemiplegia caused most deaths in February and July, and fewest in April.

The average age at death, which was for the whole year 40·5 years, as against 37·1 for the preceding year and an average of 36·6 for the years 1902-1911, was highest in August, with 45·8, and lowest in January, with 33·8.

## HOUSING.

During the year 1912, the practice was continued of making a full sanitary inspection of every house in which cases of diphtheria, typhus fever, typhoid fever, puerperal fever, and epidemic cerebro-spinal meningitis had occurred, as also of all houses in which deaths from phthisis and scarlet fever had taken place. In the preceding year, the practice was begun of making a similar examination of all houses from which cases of tuberculosis had been notified. A special card was prepared in the later part of 1912 for the record of the examination of the tuberculous houses, with a view to obtaining complete notes of their sanitary condition, including the cubic space of each room in houses of three rooms and under, and the means of ventilation of the rooms, with the distribution of the beds. This detailed survey is proving of considerable value in providing information of the housing conditions with which tuberculosis is associated. It is scarcely necessary to add that it is followed up by the removal of all insanitary conditions that can be dealt with under the existing Acts. A survey has also been made of the workshops in which tuberculosis cases occur, when there is reason to believe that the conditions of employment may have had some connection with the occurrence or development of the tuberculosis. These surveys were in addition to the usual inspections carried out day by day by the nuisance inspectors within their own districts. The number of these inspections and the nature of the defects found and dealt with are given in the monthly and annual reports of the Sanitary Inspector.

During the year, the special survey or inspection of the remaining older or more dilapidated houses which had been begun in 1911 was continued. Of 371 houses thus surveyed, 66 were closed early in 1913 by order of the Town Council, under Section 72 of the local Act of 1881. No action was taken under the Housing and Town Planning Act, 1909, as the powers contained in the local Act for dealing with uninhabitable houses are more easily applied and can be exercised by the Town Council without appeal to another authority.

In connection with the various inspections of houses during the year, a large number of notices were issued by the Sanitary Inspector dealing with drainage and sanitary conveniences, dilapidations, improvements of ventilation and lighting, want of cleanliness, dampness, overcrowding, and paving of passages and courts. Altogether, 6,801 intimations were issued under the Public Health Act, which, in between one-fifth and one-sixth of the cases, had to be followed up by notices under the authority of the Town Council because of the intimations not being complied with. In the ultimate result, practically all the more important requirements of the Sanitary Department were met, and in several instances, where the requirements were not complied with, the houses were subsequently not let. Details of the various matters dealt with are given in the report of the Sanitary Inspector.

In 22 cases, houses or apartments were closed—11 because of their being underground within the meaning of the Public Health Act, and 11 because of being undersized or insufficiently lighted or ventilated.

A large amount of work continues to be done by the Department in inspecting the windows of houses for the purpose of seeing that the sashes are so hung or arranged as to admit of their being easily opened for purposes of ventilation. These inspections have mainly followed upon the administrative efforts of the Department in regard to the care of tuberculous cases, but they are by no means confined to houses occupied by such cases. Altogether, the windows of 740 rooms were thus dealt with in this way during the year. As was mentioned in the report for the preceding year, the powers for dealing with window ventilation are not sufficiently explicit.

## WATER SUPPLY.

During the year, the condition of the water supply continued to engage the serious attention of the newly created Water Committee of the Town Council. The public interest in the water supply was accentuated by the typhoid outbreak in the last months of the year, an outbreak which, as has already been stated, may have originated in the pollution of the River Dee a few miles above the intake of the City water supply at Cairnton.

About the middle of the year, the Water Engineer, in conjunction with Mr. C. P. Hogg as Consulting Engineer, submitted an interim report to the Water Committee, in which they suggested two alternative schemes for dealing with the water supply. One of the schemes was for the extension of the present supply from the Dee and the other was for an entirely new supply from the Dye, a small tributary of the Feugh, which enters the Dee at Banchory. Under both schemes, the water was to be purified by storage and filtration. The provision for storage under the Dye scheme was large, as the Dye is a small stream, and the flood water of the wet months had to make good the deficiencies of the dry months. The water of the Dye is, especially in flood times, distinctly stained with peat, but it had the advantage, as compared with the water of the Dee, in being drawn from an area which could have been easily made free from domestic pollution. On the other hand, in regard to the Dee, it was believed that there could be no misgiving as to the abundance of the supply at all times, and that the water, although open to pollution, could be rendered safe by adequate storage and filtration. Each scheme is estimated to cost upwards of half a million, the Dee scheme being, however, somewhat more costly than the Dye.

No decision was come to as to the choice of one of the two schemes, and towards the end of the year the Town Council remitted to the Water Committee to instruct the Water Engineer to prepare an additional scheme for a supply of water from the River Avon—the source of supply for which the Town Council had prepared a scheme in 1910 and approached Parliament with a view to obtaining their sanction, as stated in previous reports. It had been subsequently suggested that it might be practicable to proceed with an Avon scheme on a smaller but sufficient scale than had been contemplated under the Bill submitted to the Parliamentary Committee.

## SEWERAGE.

During the year, the operations for the construction of a storm-water culvert from School Road, in Old Aberdeen, along the Seaton Links to the River Don, which had been begun in the preceding year, were completed. This culvert now receives the overflow waters of the Powis or Tile Burn, which runs under University Road to Ladymill and thence to the Links. It also takes up part of the storm waters from the main northern district intercepting sewer.

## DESTRUCTION OF REFUSE.

During the year, inquiries were continued by the Cleansing Committee regarding the erection of a refuse destructor on the site acquired for this purpose in Nelson Street, and the Committee expended much time in carefully considering certain offers for the erection of a refuse destructor, according to a specification prepared by the Burgh Surveyor. The offers were received from the leading makers of destructors. The offers showed that the destructor, including clinker shed, office, roadways, &c., could be erected for about £37,000. It was estimated that the annual expenditure, including sinking fund and interest, would amount to £6,700, and that the revenue from steam to be supplied to the Electricity Department in the production of electricity might be put at £1,352, giving, thus, a net annual cost of £5,348. The Cleansing Inspector estimated that the saving on cartage and certain workmen's wages, as compared with the existing arrangement, would amount to £1,600. The net annual cost of the new scheme was to amount, therefore, to £3,748.

Later on in the year, however, doubt arose in the Council as to the necessity for incurring this permanent addition to the expenditure of the Cleansing Department, unless it could be clearly shown that there were no places, such as disused quarries, in the immediate vicinity of the City that could be utilised, at least for some years, for the reception of the town refuse. A remit was accordingly made by the Council for this purpose in the early summer, and reported on in 1913. The report on this remit has led to the abandonment for the time being of the destructor scheme and to the adoption of a scheme for the purchase of certain extensive disused granite quarries at Cairncry. The capital expenditure on this scheme was estimated at £9,610, and the net annual expenditure for sinking fund and interest and transport of refuse by motor haulage was estimated to amount to only £1,300, or, roughly, about one-third of the annual cost of the destructor scheme.

## CITY HOSPITAL.

*(Table XVIII.)*

The extensive additions and alterations at the hospital, including the pavilion and shelters for tuberculous cases, were taken full advantage of during the year. Owing to the treatment of tuberculous cases being undertaken as a new feature in the work of the hospital, and to part of the old accommodation for zymotic patients being utilised for this purpose, the recent extensions have been found to be barely adequate to meet all the current requirements of the City. The stringency of accommodation was the more felt as the total number of patients admitted to the hospital was the largest ever experienced in its history. This was due to the continued high prevalence of scarlet fever during the year, combined with an exceptional prevalence of diphtheria, and also the special outbreak of typhoid fever, to which reference has already been fully made. The tuberculous cases also added considerably to the admissions. In all, 1,994 cases were admitted during the year, as against 1,636 in the preceding year, which was the highest yearly number on record for the hospital up to that date, and as against an average of 907 for the preceding ten years. The average daily number of patients under treatment throughout the year varied from 175 to 309.

In a preceding table (Table XIV.), the proportion of the cases of the three most common notifiable zymotics admitted to hospital has already been given—the proportion being 80 per cent. for scarlet fever, 92 for diphtheria, and 88 for typhoid fever.

The accompanying table (Table XVIII.) gives a summary of all the cases admitted during the year, together with a corresponding summary for each of the preceding ten years. As usual, the bulk of the patients were suffering from scarlet fever or diphtheria.

*Scarlet Fever.*—Of this disease, 883 cases were admitted, or 333 above the yearly average for the preceding ten years. The case-mortality (2·9 per cent.) was distinctly higher than in the preceding year, when it was 1·9, and was above the average (1·8) for the preceding ten years. The case-mortality in the four years ending 1910 had been exceptionally low, and reduced considerably the average for the ten years. The case-mortality for 1912 was not excessive as compared with that for the first five years of the decade.

*Diphtheria* was, as already reported, exceptionally prevalent during the year, and accounted for 727 of the zymotic cases admitted to the hospital. In the preceding year, the number was 318; while the average for the preceding ten years was 192. The case-mortality was one of the lowest on record for this disease in the Hospital, being only 3·7 per cent., as against 5·3 in 1911, 11·8 in 1910, and an average of 7·7 for the ten years preceding 1912.

Attention was specially directed in the report for the preceding year to the late stage of the illness reached by many of the patients before their admission to

## Table XVIII.

### ABERDEEN.—CITY HOSPITAL.—ANNUAL SUMMARY, 1912.

### Zymotic Admissions and Deaths during each Year from 1902 to 1912 inclusive.

| Disease. | | 1912 | 1911 | 1910 | 1909 | 1908 | 1907 | 1906 | 1905 | 1904 | 1903 | 1902 | 1902-1911. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | Total | Annual Average |
| Small Pox, | Admitted, ... | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 4 | 0·4 |
| | Died, ... .. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ... | ... |
| | Percent. of Deaths to Admissions, .. | 0 | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | ... | ... |
| Scarlet Fever, ... | Admitted, ... | 883 | 1025 | 613 | 871 | 1005 | 448 | 140 | 185 | 534 | 408 | 278 | 5507 | 550·7 |
| | Died, ... .. | 26 | 19 | 7 | 7 | 15 | 4 | 5 | 7 | 16 | 9 | 8 | 97 | 9·7 |
| | Percent. of Deaths to Admissions, ... | 2·9 | *1·9* | *1·1* | *0·8* | *1·5* | *0·9* | *3·6* | *3·8* | *3·0* | *2·2* | *2·9* | ... | 1·8 |
| Diphtheria, | Admitted, .. | 727 | 318 | 272 | 244 | 239 | 174 | 192 | 127 | 131 | 120 | 107 | 1924 | 192·4 |
| | Died, ... ... | 27 | 17 | 32 | 22 | 15 | 14 | 17 | 7 | 9 | 8 | 8 | 149 | 14·9 |
| | Percent. of Deaths to Admissions, ... | 3·7 | *5·3* | *11·8* | *9·0* | *6·3* | *8·0* | *8·9* | *5·5* | *6·9* | *6·7* | *7·5* | ... | 7·7 |
| Typhoid Fever (including Para Typhoid), | Admitted, ... | 103 | 33 | 16 | 28 | 10 | 17 | 9 | 13 | 24 | 22 | 28 | 200 | 20·0 |
| | Died, ... ... | 10 | 3 | 2 | 2 | 0 | 4 | 0 | 3 | 2 | 0 | 1 | 17 | 1·7 |
| | Percent. of Deaths to Admissions, .. | 9·7 | *9·1* | *12·5* | *7·1* | *0* | *23·5* | *0* | *23·1* | *8·3* | *0* | *3·6* | ... | 8·5 |
| Typhus Fever, ... | Admitted, ... | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 97 | 22 | 0 | 0 | 122 | 12·2 |
| | Died, ... ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 0 | 0 | 13 | 1·3 |
| | Percent. of Deaths to Admissions, .. | 0 | *0* | *0* | *0* | *0* | *0* | *0* | *12·4* | *4·5* | *0* | *0* | ... | 10·7 |
| Measles, ... | Admitted, ... | 17 | 86 | 4 | 7 | 36 | 30 | 50 | 6 | 72 | 78 | 156 | 525 | 52·5 |
| | Died, ... ... | 12 | 4 | 0 | 1 | 1 | 11 | 3 | 0 | 1 | 9 | 3 | 33 | 3·3 |
| | Percent. of Deaths to Admissions, ... | 70·6 | *4·7* | *0* | *14·3* | *2·8* | *36·7* | *6·0* | *0* | *1·4* | *11·5* | *1·9* | ... | 6·3 |
| Tuberculosis | Admitted, ... | 188 | 122 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 122 | 122 |
| | Died, ... ... | 17 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 |
| | Percent. of Deaths to Admissions, ... | 9·0 | *7·4* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | ... | 7·4 |
| Other Cases, | Admitted, ... | 73 | 49 | 70 | 63 | 56 | 64 | 54 | 193 | 54 | 31 | 38 | 672 | 67·2 |
| | Died, ... .. | 12 | 6 | 9 | 14 | 10 | 14 | 6 | 8 | 7 | 5 | 3 | 82 | 8·2 |
| | Percent. of Deaths to Admissions, ... | 16·4 | *12·2* | *12·9* | *22·2* | *17·7* | *21·9* | *11·1* | *4·1* | *13·0* | *16·1* | *7·9* | ... | 12·2 |
| Total Cases, | Admitted, ... | 1994 | 1636 | 975 | 1213 | 1346 | 734 | 445 | 621 | 840 | 659 | 607 | 9076 | 907·6 |
| | Died, ... ... | 104 | 58 | 50 | 46 | 41 | 47 | 31 | 37 | 36 | 31 | 23 | 400 | 40·0 |
| | Percent. of Deaths to Admissions, ... | 5·2 | *3·5* | *5·1* | *3·8* | *3·0* | *6·4* | *7·0* | *6·0* | *4·3* | *4·7* | *3·8* | ... | 4·4 |

hospital. As was stated, the parents of the patients are in many cases to blame for delay in calling in a doctor. In view of the much greater efficacy of antitoxin treatment in the first or second day of the illness as compared with later days, it is of great moment that the patient should be sent early to hospital, unless the medical practitioner is himself to begin the antitoxin treatment before the removal of the case. I am glad to be able to report that fewer cases than usual died within a few hours after admission. In the preceding year, out of a total of 17 deaths among diphtheria patients in hospital, as many as 8 took place within 24 hours after the admission of the patient. In 1912, there were only 3 such deaths out of 27. This was in part due to the milder character of the disease in 1912 than in 1911. The average duration of the disease in all the patients who died was $12\frac{1}{2}$ days from the time of admission. In the preceding year, it was $6\frac{1}{2}$ days, and the average age of the deceased was $4\frac{1}{26}$ years, as against $3\frac{1}{6}$ in the preceding year.

Out of the total cases treated (727), intubation or tracheotomy had to be practised in 48 cases, or about 1 in every 15 cases admitted. In the preceding year, the proportion was 1 in every 8 cases. Of the 48 cases thus operated on, 39 recovered from the disease. Of these 48 cases, 43 were treated by intubation of the larynx and 1 by tracheotomy. In 4 cases, both intubation and tracheotomy had to be performed. Of the 43 patients treated by intubation, 8 died. The average age of those intubated was $3\frac{1}{2}$ years. The single case treated by tracheotomy recovered, the age of the patient being under one year. Of the 4 cases on whom both intubation and tracheotomy were performed, one died, the patient being a child of one year and two months.

In only 43 of the 727 cases admitted, or about 1 in 17, had antitoxin been administered before admission. In the preceding year, the proportion was exactly the same, namely, 1 in 17. The Department continues to offer antitoxin gratuitously to medical men and to lend a sterilised syringe.

*Typhoid Fever.*—Owing to the considerable outbreak of this disease in the last months of the year, the number of cases of typhoid fever admitted to the hospital during the year was much higher than in any single year since the opening of the hospital in the early seventies. There had been years with a larger number of notified cases, as, for example, the years 1898 to 1901, but at that time the proportion of such cases removed to the City Hospital was much smaller than in more recent times, owing mainly to the general hospitals of the City—the Royal Infirmary and the Sick Children's Hospital—dealing with a considerable proportion of the cases. It is very desirable, in my opinion, to remove freely cases of typhoid for hospital isolation. There can be no doubt that where cases of typhoid are left at home without strict measures of isolation and precautions in nursing, the disease may not infrequently extend to other members of the household and even to other families in the same tenement, especially where sanitary conveniences are used in common. I was much impressed with this fact in an investigation that I was asked to undertake of the interesting milk epidemic of typhoid in Peterhead in 1907. In that epidemic, which started with 31 cases in the first fortnight, or exactly the same number as occurred within the same period in our own epidemic, the epidemic went on for about three months, producing 30 to 40 cases a week, until, eventually, upwards of 400 cases had been reported. But, owing partly to some failure in recognising the true nature of many of the earlier cases and partly to lack of hospital accommodation, a large proportion of the earlier cases had been nursed at home, and in many instances in small, working-class houses. I attribute in some measure the much smaller proportion of total cases in the Aberdeen epidemic to the full isolation of the cases so soon as they were known. No case was allowed to remain at home unless there was adequate provision for isolation and skilled nursing was available. The proportion of cases removed to hospital amounted to 90 per cent.

In addition to the genuine cases of typhoid or para-typhoid admitted, 18 cases of supposed or doubtful typhoid were received into the hospital for observation in order to ensure that every possible case was being dealt with.

The 103 cases admitted to the City Hospital included 11 cases of para-typhoid. There were 10 deaths, giving for the typhoid and para-typhoid cases taken together a case-mortality of 9·7 per cent., which is slightly higher than the average (8·5) for the preceding ten years. There were, however, no deaths directly attributable to para-typhoid. It is true that one para-typhoid patient, a man of 25 years, died shortly after his discharge from hospital, but he had been suffering from advanced cardiac disease for some years.

From some notes made by the Hospital Resident, Dr. George S. Banks, I have extracted the following points regarding the clinical character of the cases dealt with in the hospital:—

The para-typhoid cases were, as usual, milder than the typhoid cases, and none of them presented any serious complications. Only one was in any degree actively ill. The symptoms of the para-typhoid cases were, however, of the same type as those of the typhoid cases, and it would have been difficult, if not impossible, to distinguish any of the cases from typhoid without the bacteriological investigations and agglutination tests which were freely undertaken in every case of typhoid and para-typhoid.

The average duration of febrile temperature in the typhoid cases which recovered was 30 days. The highest temperatures recorded were associated with definite complications. Thus, in one case in which the temperature rose so high as 106 deg. F., there was extensive intestinal hæmorrhage. In another case, with a maximum temperature of 105·2 deg., there was facial erysipelas; and in a third case, where the temperature reached 104·8 deg., there was parotitis. The characteristic rash was present in only half of the cases. The saffron yellow colour of the palms of the hands and soles of the feet, which has in recent years been referred to as a symptom of typhoid, was very well marked in many of the cases. It was not confined to horny-handed workmen, for the most marked case was that of a boy of 13. Diarrhœa was present in about 24 per cent. of the cases. It was, as a rule, easily controllable by attention to diet. A few cases of obstinate diarrhœa were, however, met with. They were usually severe cases, most of which ended fatally. Constipation was the rule. Hæmorrhage was copious in only 3 cases, 2 of which died. In 2 of these cases, the hæmorrhage occurred at the beginning of the fourth week, and in the remaining case, at the end of the third week. In 6 additional cases, there was slight hæmorrhage. Perforation of the bowel occurred in 4 cases. Three were operated on within a few hours after perforation, and, of these, 2 died. In the patient who recovered, the perforation had followed immediately on hæmorrhage —a rather rare sequence—but the patient made a remarkable recovery, the temperature falling to normal and remaining so after the operation. In 4 cases, the perforation was not discovered until after death. There had been no definite symptoms during life indicating perforation. The spleen was demonstrably enlarged in only about half the cases admitted to hospital. This is a somewhat less proportion than usual. In 4 cases, the spleen was very hard and almost stone-like to the touch.

Bronchitis was very common, but gave little trouble. Broncho-pneumonia was present in 2 cases, both of which proved fatal. Hypostatic congestion of the lungs was a prominent feature in one fatal case. Several of the cases were associated with pulmonary tuberculosis, and 2 of these died, both with marked lung symptoms. Pleurisy was not definitely present in any of the cases. Phlebitis or thrombosis was present in 6 cases. In 2, the thrombosis was probably iliac. In the remainder, it was in the lower limbs. In one case, there were purpuric complications. Purpuric spots first appeared on the abdominal wall, followed two days later by hæmorrhage from the kidneys, then from the nose, and, lastly, from the intestine. The patient, however, made a good recovery.

As regards nervous symptoms, two of the typhoid patients had delusions, and one had hallucinations which were not associated with high temperature. One of the para-typhoid cases showed considerable mental disturbance. Memory was often much impaired temporarily. Albuminuria was present in about one-third of the cases. Bacilluria was common—the bacillus coli being the usual cause. Pus was present in the urine in 6 cases. Typhoid bacilli were found in only one of the six cases with bacilluria.

Of 47 blood cultures that were made, 19 showed the presence of typhoid bacillus. Many of the cases had not been admitted until after the second or third week of the disease, by which time the bacillus in the blood has not infrequently disappeared. The stools and urine of every patient were examined for the bacillus—in some instances repeatedly; it was found in the stools of 15 patients, and in the urine of 16. No patient was allowed to leave the hospital until a negative result had been obtained in two successive examinations of the stools and urine. Stock typhoid vaccines were tried in some cases, and seemed, on the whole, to diminish the duration of the fever. In one case, there appeared to be a striking diminution of temperature brought about by the administration of the vaccine.

It is of much interest to note that in 2 of the cases the patient suffered from both typhoid and para-typhoid. There was a quiescent interval between the two diseases. The main proof of the distinction between the two rested upon careful and repeated bacteriological examinations which gave quite definite results.

*Measles.*—Of this disease, 17 cases were admitted during the year, and mostly within the first month. The mortality was extraordinarily high. So many as 12 of the patients died. This was, however, due to the fact that only severe cases were being admitted to the hospital, and that the cases were confined to children under three to four years of age. The cases removed were from some of the poorest homes in the City, and had nearly in every instance developed serious lung conditions before or shortly after admission.

*Tuberculosis.*—Of the 188 cases of tuberculosis admitted to the City Hospital during the year, 174 were suffering from definite affection of the lungs. In a few—about 13—of these cases, the lung affection was accompanied by well-marked affection of other organs, mostly the cervical glands. In the accompanying table the whole of the lung cases have been classified primarily according to the stage (Turban) of the disease on admission, and secondarily according as they had tubercle bacilli in the sputum or not, and as to whether they were treated with tuberculin. The results are given for each group and sub-group, in respect of duration of stay in hospital, increase or decrease of weight, condition of lungs, state of general health, bacilli in sputum, and fitness for work.

The cases are too few to allow of almost any definite conclusion.

In respect of the important question of the value of tuberculin treatment, nothing very distinct emerges. It is true that of the 16 deaths in hospital, all happened among the 80 cases that did not receive tuberculin, while there were no deaths among the 94 tuberculin-treated cases; but this striking difference is almost entirely due to deaths among cases admitted in so advanced a stage of the disease that it was hopeless, and therefore useless, to worry the patient with injections of tuberculin. The element of unsuitability for tuberculin treatment applies to cases at all stages, and vitiates any comparison of the treated and untreated cases, so far as the experience for the year is concerned. For, in the belief that tuberculin would possibly assist the patient, practically every case that was not greatly advanced, and that bore the administration of tuberculin without too much disturbance of the general health, received tuberculin for a longer or shorter period. The cases receiving tuberculin in each group may be regarded as the cases more likely to improve under any reasonable circumstances or treatment. If allowance is made for this fact, the table offers no definite proof of the value of tuberculin, although the Tuberculosis Officer was inclined to think that he saw occasionally, in individual patients, some distinct advantage follow its administration. Perhaps the surest test of improvement is the fitness for work at the close of the treatment. Practically all the patients when admitted were more or less unfit for ordinary work. Among the 40 cases in Stage I., 44 per cent. of the tuberculin-treated cases were fit for work when discharged, while the proportion for untreated cases was 46 per cent. Among the 40 cases in Stage II., the corresponding percentages of those rendered fit for work were 28 and 33. In the 94 cases of Stage III., the percentages were 23 and 12; but in this stage the comparison is altogether vitiated by the non-tuberculin cases embracing practically all the obviously hopeless cases on admission.

## Aberdeen.—Cases of Pulmonary Tuberculosis Admitted to City Hospital in 1912.

| ON ADMISSION. | | | | Tuberculin Treatment. | | *Average Stay in Hosp. (Days.) | ON DISCHARGE | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stage of Disease. | No. of Cases. | Tubercle Bacilli in Sputum. | | | | | Weight.* | | | | General Health. | | | | Lung Lesion. | | | | Tubercle† Bacilli in Sputum. | | Fit for Work. | | Died in Hosp. |
| | | | | | | | Gain. | | Loss. | | | | | | | | | | | | | | |
| | | Abs. | Pres. | No. | Yes. | | Cases. | Aver. (lbs.) | Cases. | Aver. (lbs.) | Much Improved. | Improved. | Stationary. | Worse.† | Much Improved. | Improved. | Stationary. | Worse.† | Abs. | Pres. | Yes. | No. | |
| I. | 40 | 40 | ... | 24 | ... | 95 | 22 | *7* | 2 | *2* | 11 | 2 | 8 | 3 | 9 | 4 | 8 | 3 | 17 | 7 | 11 | 13 | ... |
| | | | | ... | 16 | 156 | 16 | *8* | ... | ... | 7 | 1 | 6 | 2 | 7 | 2 | 5 | 2 | 13 | 3 | 7 | 9 | ... |
| | | ... | 0 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| | | | | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... |
| | Totals | 40 | 0 | 24 | 16 | 119 | 38 | *7* | 2 | *2* | 18 | 3 | 14 | 5 | 16 | 6 | 13 | 5 | 30 | 10 | 18 | 22 | ... |
| II. | 40 | 21 | ... | 7 | ... | 34 | 7 | *5* | ... | ... | 4 | 2 | 1 | ... | 3 | 2 | 1 | 1 | 4 | 3 | 2 | 5 | ... |
| | | | | ... | 14 | 138 | 14 | *8* | ... | ... | 8 | 4 | 2 | ... | 7 | 5 | 2 | ... | 11 | 3 | 3 | 11 | ... |
| | | ... | 19 | 8 | ... | 98 | 7 | *9* | 1 | ? | 1 | 3 | 2 | 2 | 2 | 3 | 1 | 2 | 7 | 1 | 3 | 4 | 1 |
| | | | | ... | 11 | 187 | 11 | *10* | ... | ... | 6 | 1 | 4 | ... | 3 | 3 | 4 | 1 | 7 | 4 | 4 | 7 | ... |
| | Totals | 21 | 19 | 15 | 25 | 125 | 39 | *8* | 1 | ? | 19 | 10 | 9 | 2 | 15 | 13 | 8 | 4 | 29 | 11 | 12 | 27 | 1 |
| III. | 94 | 23 | ... | 9 | ... | 93 | 7 | *6* | 2 | ? | 1 | 2 | 3 | 3 | 1 | 3 | 1 | 4 | 2 | 7 | 1 | 6 | 2 |
| | | | | ... | 14 | 135 | 14 | *11* | ... | ... | 3 | 4 | 2 | 5 | 4 | 6 | 1 | 3 | 6 | 8 | 2 | 12 | ... |
| | | ... | 71 | 32 | ... | 100 | 15 | *5* | 17 | ? | 2 | 5 | 8 | 17 | 5 | 3 | 5 | 19 | 13 | 19 | 4 | 15 | 13 |
| | | | | ... | 39 | 166 | 35 | *6* | 4 | *4* | 7 | 9 | 13 | 10 | 10 | 7 | 10 | 12 | 18 | 21 | 10 | 29 | ... |
| | Totals | 23 | 71 | 41 | 53 | 132 | 71 | *7* | 23 | ? | 13 | 20 | 26 | 35 | 20 | 19 | 17 | 38 | 39 | 55 | 17 | 62 | 15 |
| All Stages. | | | | | | | | | | | | | | | | | | | | | | | |
| Grand Totals | 174 | 84 | 90 | 80 | 94 | 128 | 148 | *7* | 26 | ? | 50 | 33 | 49 | 42 | 51 | 38 | 39 | 47 | 98 | 76 | 47 | 111 | 16 |

* A few cases leaving before the expiry of two weeks are omitted from the averages.

† Includes cases that died.

The whole cases, as already remarked, are, however, far too few for any proper comparison. This only may with certainty be said, that whatever benefit may accrue from tuberculin treatment, it is not a striking one. This is in accordance with the experience of the majority of unprejudiced observers.

Of the remaining 14 cases admitted to the tuberculosis wards of the Hospital, 4 were cases of bone, joint, or glandular disease, 5 were cases of the "pretuberculous" type, and the remaining 5 were cases with some lung symptoms originally suggestive of tuberculosis, but appearing on continued observation to be due to other causes.

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